

HENDERSONVILLE  
PHASE 2 STORMWATER PERMIT  
TNS075353  
ANNUAL REPORT  
SEPTEMBER 30, 2015-SEPTEMBER 30, 2016





Tennessee Department of Environment and Conservation  
Division of Water Resources  
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243  
1-888-891-8332 (TDEC)

**Municipal Separate Storm Sewer System (MS4) Annual Report**

**1. MS4 INFORMATION**

City of Hendersonville	TNS075353
Name of MS4	MS4 Permit Number
Duane Allen	Dallen@hvilletn.org
Name of Contact Person	Email Address
615-822-1016	
Telephone (including area code)	
dallen@hvilletn.org	
Mailing Address	

Hendersonville	TN	37075
City	State	ZIP code

What is the current population of your MS4? 60,000

What is the reporting period for this annual report? From 09/30/2015 to 09/30/2016

**2. WATER QUALITY PRIORITIES (SECTION 3.1)**

- A. Does your MS4 discharge into waters listed as impaired on TN's most current 303(d) list and/or according to the on-line GIS mapping tool? ☒ Yes ☐ No
- B. If yes, please attach a list all impaired waters within your jurisdictional area. ADDED TO APPENDIX
- C. Does your MS4's jurisdictional area contain any waterbodies where a TMDL has been approved for parameters other than pathogens, siltation and habitat alterations? If yes, please attach a list.
- D. Does your MS4 discharge to any Exceptional TN Waters (ETWs) or Outstanding National Resource Waters (ONRWs)? If yes, please attach a list. ☐ Yes ☒ No
- E. Are you implementing additional specific provisions to ensure the continued integrity of ETWs or ONRWS located within your jurisdiction? ☐ Yes ☒ No

**3. PROTECTION OF STATE OR FEDERALLY LISTED SPECIES (SECTION 3.2.1 General Permit for Phase II MS4s)**

- A. Are there any state or federally listed species within the MS4's jurisdiction? ☐ Yes ☒ No
- B. Are any of the MS4 discharges or discharge-related activities likely to jeopardize any state or federally listed species? ☐ Yes ☒ No
- C. Please attach any authorizations or determinations by U.S. Fish & Wildlife Service on the effect of the MS4 discharges on state or federally listed species.

**4. PUBLIC EDUCATION AND PUBLIC PARTICIPATION (SECTION 4.2.1 AND 4.2.2)**

- A. Have you developed a Public Information and Education plan (PIE)? ☐ Yes ☒ No
- B. Is your public education program targeting specific pollutants and sources of those pollutants, such as Hot Spots? ☐ Yes ☒ No
- C. If yes, what are the specific causes, sources and/or pollutants addressed by your public education program? \_\_\_\_\_

## Municipal Separate Storm Sewer System (MS4) Annual Report

- D. Note specific successful outcome(s) (NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period. People call to inquire about BMP's they see in the field.
- E. Do you have an advisory committee or other body comprised of the public and other stakeholders that provides regular input on your stormwater program? ☐ Yes ☒ No
- F. How do you facilitate, advertise, and publicize public involvement and participation opportunities? CHANNEL 3
- G. Do you have a webpage dedicated to your stormwater program? ☒ Yes ☐ No  
If so, what is the link/URL: WWW.HVILLETN.ORG
- H. Are you tracking and maintaining records of public education, outreach, involvement and participation activities? Please attach a summary of these activities. ☒ Yes ☐ No

### 5. ILLICIT DISCHARGE DETECTION AND ELIMINATION (SECTION 4.2.3)

- A. Have you completed a map of all outfalls and receiving waters of your storm sewer system? ☒ Yes ☐ No
- B. Have you completed a map of all storm drain pipes of storm sewer system? ☐ Yes ☒ No
- C. How many outfalls have you identified in your system? 18
- D. Have any of these outfalls been screened for dry weather discharges? ☒ Yes ☐ No
- F. What is your frequency for screening outfalls for illicit discharges? Monthly & After significant rain events
- G. Do you have an ordinance that effectively prohibits illicit discharges? ☒ Yes ☐ No
- H. During this reporting period, how many illicit discharges/illegal connections have you discovered (or been reported to you)? 13
- I. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated? 13

### 6. CONSTRUCTION SITE STORMWATER RUNOFF (SECTION 4.2.4)

- A. Do you have an ordinance or adopted policies stipulating:
- |                                                      |                                         |                             |
|------------------------------------------------------|-----------------------------------------|-----------------------------|
| Erosion and sediment control requirements?           | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Other construction waste control requirements?       | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Requirement to submit construction plans for review? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| MS4 enforcement authority?                           | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
- B. How many active construction sites disturbing at least one acre were there in your jurisdiction this reporting period? 55
- C. How many of these active sites did you inspect this reporting period? 55
- D. On average, how many times each, or with what frequency, were these sites inspected Monthly/Biweekly (e.g., weekly, monthly, etc.)?
- E. Do you prioritize certain construction sites for more frequent inspections? ☒ Yes ☐ No  
If Yes, based on what criteria? Location in relation to waters of the State/303 (d) listed streams and failure to install/maintain BMPs

### 7. PERMANENT STORMWATER CONTROLS (SECTION 4.2.5)

- A. Do you have an ordinance or other mechanism to require:

## Municipal Separate Storm Sewer System (MS4) Annual Report

Site plan reviews of all new and re-development projects? ☒ Yes ☐ No

Maintenance of stormwater management controls? ☒ Yes ☐ No

Retrofitting of existing BMPs with green infrastructure BMPs? ☐ Yes ☒ No

B. What is the threshold for new/redevelopment stormwater plan review? (e.g., all projects, projects disturbing greater than one acre, etc.) ALL

C. Have you implemented and enforced performance standards for permanent stormwater controls? Barge Wagner hired as consultants to rewrite Stormwater Ordinance. ☐ Yes ☒ No  
Planning to implement new ordinance by 1/1/2017.

D. Do these performance standards go beyond the requirements found in Section 4.2.5.2 and require that pre-development hydrology be met for:

Flow volumes ☐ Yes ☒ No

Peak discharge rates ☐ Yes ☒ No

Discharge frequency ☐ Yes ☒ No

Flow duration ☐ Yes ☒ No

E. Please provide the URL/reference where all permanent stormwater management standards can be found.

WWW.HVILLETN.ORG

F. How many development and redevelopment project plans were reviewed for this reporting period? 55

G. How many development and redevelopment project plans were approved? 55

H. How many permanent stormwater management practices/facilities were inspected? 55

I. How many were found to have inadequate maintenance? 20

J. Of those, how many were notified and remedied within 30 days? (If window is different than 30 days, please specify) 16

K. How many enforcement actions were taken that address inadequate maintenance? 26 NOV's Issued

L. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance? ☐ Yes ☒ No

M. Do all municipal departments and/or staff (as relevant) have access to this tracking system? ☒ Yes ☐ No

N. Has the MS4 developed a program to allow for incentive standards for redeveloped sites? ☐ Yes ☒ No

O. How many maintenance agreements has the MS4 approved during the reporting period? 0

### 8. CODES AND ORDINANCES REVIEW AND UPDATE (SECTION 4.2.5.3)

A. Is a completed copy of the EPA Water Quality Scorecard submitted with this report? ☐ Yes ☒ No

B. Include status of implementation of code, ordinance and/or policy revisions associated with permanent stormwater management. ACTIVE

### 9. STORMWATER MANAGEMENT FOR MUNICIPAL OPERATIONS (SECTION 4.2.6)

A. Have stormwater pollution prevention plans (or an equivalent plan) been developed for:

All parks, ball fields and other recreational facilities ☐ Yes ☒ No



## Municipal Separate Storm Sewer System (MS4) Annual Report

- All municipal turf grass/landscape management activities ☐ Yes ☒ No
- All municipal vehicle fueling, operation and maintenance activities ☐ Yes ☒ No
- All municipal maintenance yards ☐ Yes ☒ No
- All municipal waste handling and disposal areas ☐ Yes ☒ No
- B. Are stormwater inspections conducted at these facilities? ☐ Yes ☒ No
1. If Yes, at what frequency are inspections conducted? \_\_\_\_\_
- C. Have standard operating procedures or BMPs been developed for all MS4 field activities? (e.g., road repairs, catch basin cleaning, landscape management, etc.) ☐ Yes ☒ No
- D. Do you have a prioritization system for storm sewer system and permanent BMP inspections? ☐ Yes ☒ No
- E. On average, how frequently are catch basins and other inline treatment systems inspected? YEARLY
- F. On average, how frequently are catch basins and other inline treatment systems cleaned out/maintained? AS REPORTED
- G. Do municipal employees in all relevant positions and departments receive comprehensive training on stormwater management? ☒ Yes ☐ No
- H. If yes, do you also provide regular updates and refreshers? ☒ Yes ☐ No
- If so, how frequently and/or under what circumstances? Employees tasked with Stormwater related duties maintain current Level 1&2 certifications through TDEC.

### 10. STORMWATER MANAGEMENT PROGRAM UPDATE (SECTION 4.4)

- A. Describe any changes to the MS4 program during the reporting period including but not limited to:
- Changes adding (but not subtracting or replacing) components, controls or other requirements (Section 4.4.2.a): N/A
- Changes to replace an ineffective or unfeasible BMP (Section 4.4.2.b): N/A
- Information (e.g. additional acreage, outfalls, BMPs) on program area expansion based on annexation or newly urbanized areas. N/A
- Changes to the program as required by the division (Section 4.4.3). N/A

### 11. EVALUATING/MEASURING PROGRESS

- A. What indicators do you use to evaluate the overall effectiveness of your Stormwater Management Program, how long have you been tracking them, and at what frequency? Note that these are not measurable goals for individual BMPs or tasks, but large-scale or long-term metrics for the overall program, such as in-stream macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.

Indicator	Began Tracking (year)	Frequency	Number of Locations
<i>Example: E. coli</i>	<i>2003</i>	<i>Weekly April–September</i>	<i>20</i>

## Municipal Separate Storm Sewer System (MS4) Annual Report

B. Provide a summary of data (e.g., water quality information, performance data, modeling) collected in order to evaluate the performance of permanent stormwater controls installed throughout the system. This evaluation may include a comparison of current and past permanent stormwater control practices. To measure the effectiveness of our SMP we are fully dependent on the State stream/lake assessments.

### 12. ENFORCEMENT (SECTION 4.5)

A. Identify which of the following types of enforcement actions you used during the reporting period, indicate the number of actions, the minimum measure (e.g., construction, illicit discharge, permanent stormwater control) or note those for which you do not have authority:

Action	Construction	Permanent Stormwater Controls	Illicit Discharge	Authority?	
Notice of violation	# <u>26</u>	# <u>      </u>	# <u>13</u>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Administrative fines	# <u>      </u>	# <u>      </u>	# <u>      </u>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Stop Work Orders	# <u>      </u>	# <u>      </u>	# <u>      </u>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Civil penalties	# <u>      </u>	# <u>      </u>	# <u>      </u>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Criminal actions	# <u>      </u>	# <u>      </u>	# <u>      </u>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Administrative orders	# <u>      </u>	# <u>      </u>	# <u>      </u>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other <u>      </u>	# <u>      </u>	# <u>      </u>	# <u>      </u>		

B. Do you use an electronic tool (e.g., GIS, data base, spreadsheet) to track the locations, inspection results, and enforcement actions in your jurisdiction? ☐ Yes ☒ No

C. What are the 3 most common types of violations documented during this reporting period? Failure to maintain BMPs; Illicit Discharge into MS4; Tracking mud into the road

### 13. PROGRAM RESOURCES (OPTIONAL)

A. What was your annual expenditure to implement the requirements of your MS4 NPDES permit and SWMP this past reporting period? \$150000

B. What is next year's budget for implementing the requirements of your MS4 NPDES permit and SWMP? \$150000

C. Do you have an independent financing mechanism for your stormwater program? ☒ Yes ☐ No

D. If so, what is it/are they (e.g., stormwater fees), and what is the annual revenue derived from this mechanism?

Source: Land Disturbance Permit Fee Amount \$50.00/site; ~\$2750/year

Source: Amount \$

E. How many full time employees does your municipality devote to the stormwater program (specifically for implementing the stormwater program vs. municipal employees with other primary responsibilities that dovetail with stormwater issues)? 3 vs. 6

## Municipal Separate Storm Sewer System (MS4) Annual Report

F. Do you share program implementation responsibilities with any other entities? ☐ Yes ☒ No

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism
Municipal	Trash Service	
American Sweeping Corp	Street Sweeping	

G. Please attach a copy of your Organizational Chart

**DIRECTOR OF PUBLIC WORKS → DESIGN ENGINEER → ENFORCEMENT OFFICER**

### 14. CERTIFICATION

**This report must be signed by a ranking elected official or by a duly authorized representative of that person. See signatory requirements in sub-part 6.7.2 of the permit.**

*"I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury."*

James H. Moore PWD Director James H. Moore 9/27/16  
Printed Name and Title Signature Date

**Annual reports must be submitted in accordance with the requirements of Section 5.4. (Reporting) of the permit. Annual reports must be submitted to the appropriate Environmental Field Office (EFO) by September 30 of each calendar year, as shown in the table below:**

EFO	Street Address	City	Zip Code	Telephone
Chattanooga	540 McCallie Avenue STE 550	Chattanooga	37402	(423) 634-5745
Columbia	1421 Hampshire Pike	Columbia	38401	(931) 380-3371
Cookeville	1221 South Willow Ave.	Cookeville	38506	(931) 432-4015
Jackson	1625 Hollywood Drive	Jackson	38305	(731) 512-1300
Johnson City	2305 Silverdale Road	Johnson City	37601	(423) 854-5400
Knoxville	3711 Middlebrook Pike	Knoxville	37921	(865) 594-6035
Memphis	8383 Wolf Lake Drive	Bartlett	38133	(901) 371-3000
Nashville	711 R S Gass Boulevard	Nashville	37216	(615) 687-7000

## APPENDIX

1. 303 (D) Listed Streams
2. Public Education/Outreach and Involvement/Participation
3. Pollution Prevention and Good Housekeeping
4. Notice of Violations
5. Accolades

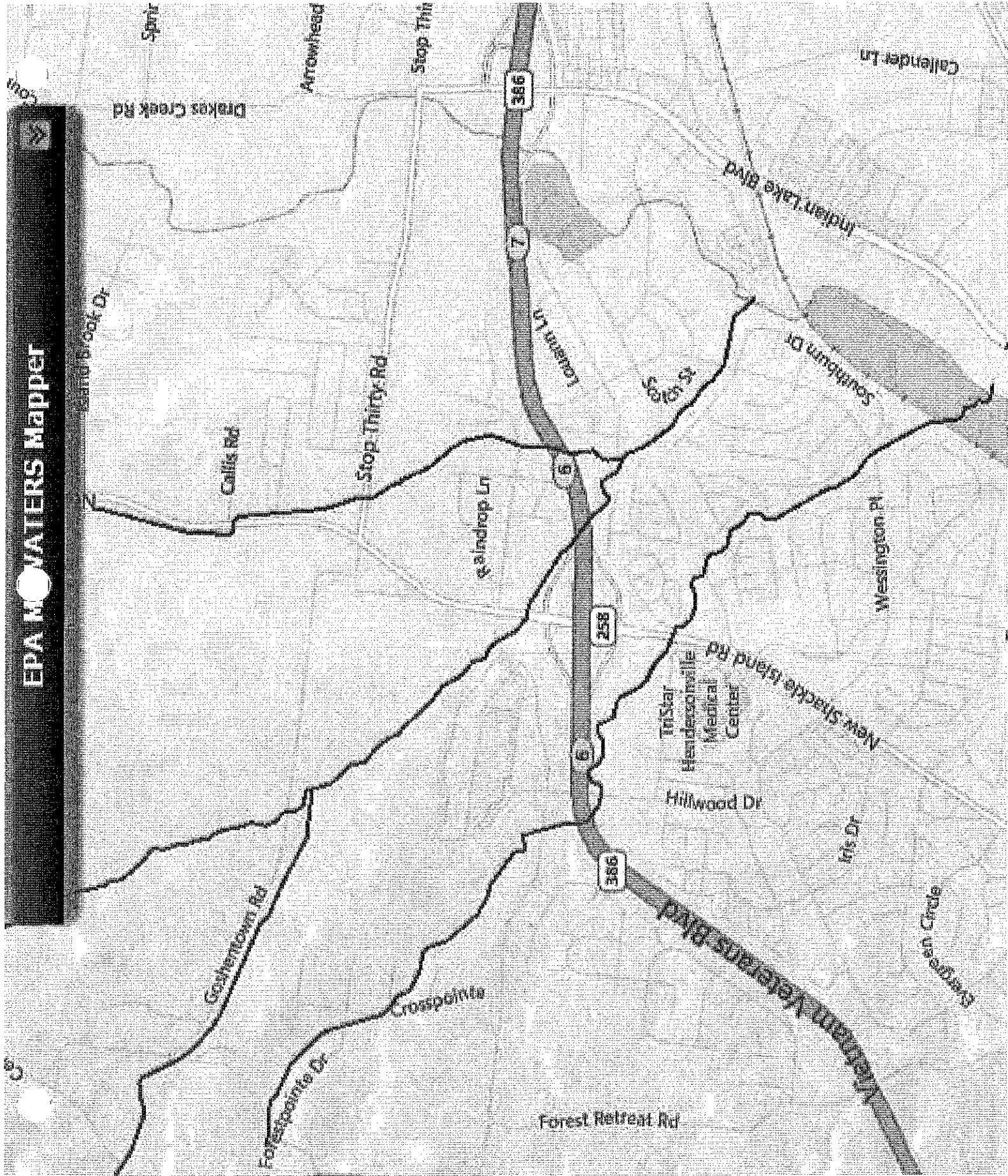
Final Version 2014 303(d) LIST (Old Hickory Watershed cont.)

Waterbody ID	Impacted Waterbody	County	Miles/Acres Impaired	CAUSE / TMDL Priority	Pollutant Source	COMMENTS
TN05130201 047 - 0100	UNNAMED TRIB TO DRAKES CREEK	Sumner	3.16	Alteration of stream-side or littoral vegetation L	Discharges from MS4 Area	Hendersonville area. Category 5. One or more uses impaired.
TN05130201 047 - 0200	UNNAMED TRIB TO DRAKES CREEK	Sumner	6.13	Alteration of stream-side or littoral vegetation L	Discharges from MS4 Area	Hendersonville area. Category 5. One or more uses impaired.
TN05130201 055-0200	SINKING CREEK	Wilson	7.4	Nutrients Other Anthropogenic Substrate Alterations Escherichia coli M L NA	Collection System Failure Discharges from MS4 Area	Category 5. EPA approved a pathogen TMDL that addresses some of the known pollutants.
TN05130201 055-0250	SINKING CREEK	Wilson	10.0	Alteration in stream-side or littoral vegetative cover Other Anthropogenic Substrate Alterations Escherichia coli L L NA	Pasture Grazing Land Development Highway, Road, and Bridge Construction	Category 5. EPA approved a pathogen TMDL that addresses some of the known pollutants.

Cheatham Reservoir Watershed

This basin contains the following USGS Hydrologic Unit Code: 05130202 (Cheatham Lake)

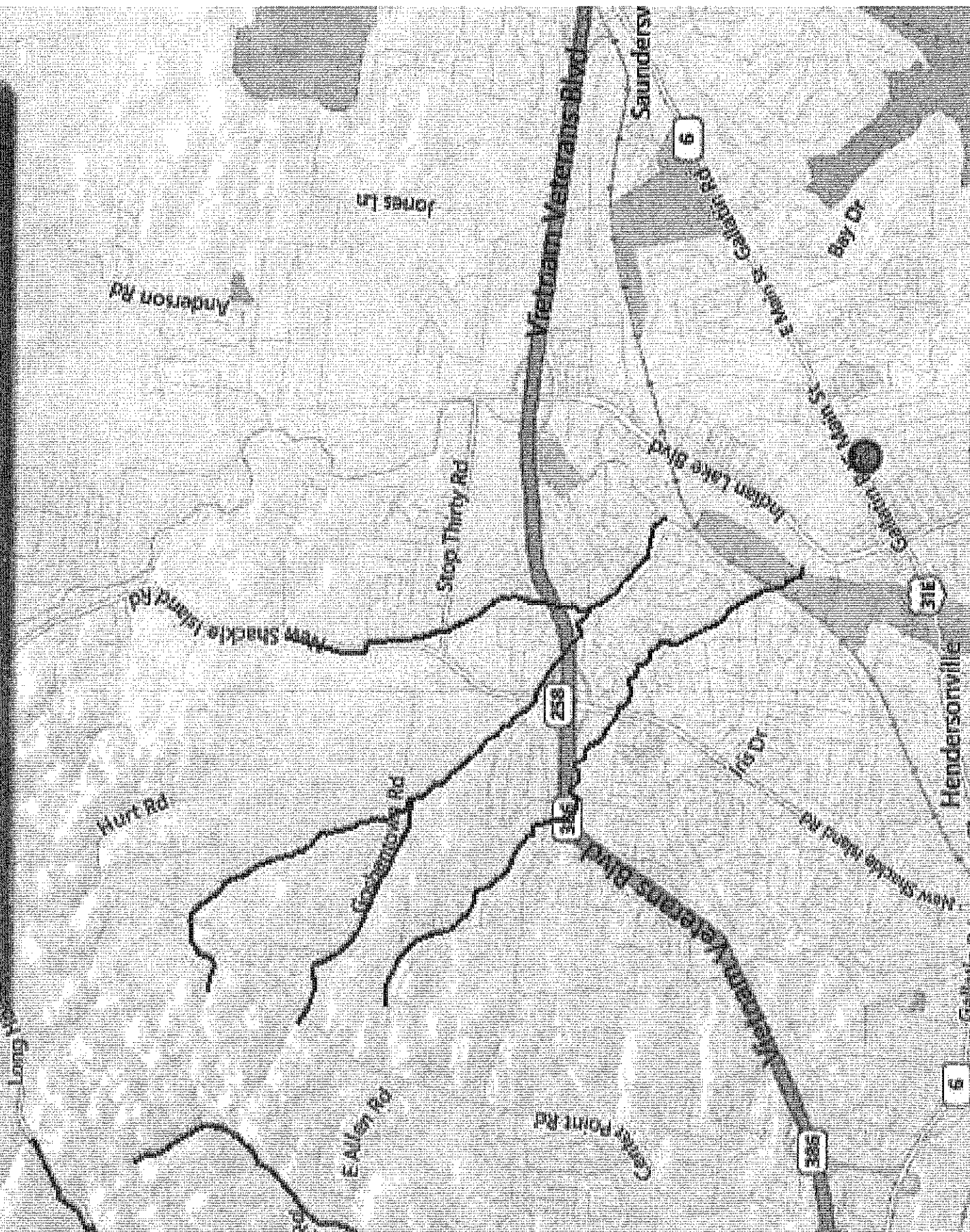
Waterbody ID	Impacted Waterbody	County	Miles/Acres Impaired	CAUSE / TMDL Priority	Pollutant Source	COMMENTS
TN05130202 001 - 3000	CHEATHAM RESERVOIR	Davidson	994 ac	Escherichia coli L	Combined Sewer Overflows Discharges from MS4 area	Water contact advisory from Bordeaux Bridge to Woodland Street. Stream is Category 5. (One or more uses impaired.)
TN05130202 001T - 0200	UNNAMED TRIB TO CHEATHAM RES.	Cheatham	2.04	Loss of biological integrity due to siltation Other Anthropogenic Habitat Alterations L L	Urbanized High Density Area	Ashland City area trib. Stream is Category 5. (One or more uses impaired.)
TN05130202 001T - 0600	UNNAMED TRIB TO CHEATHAM RES.	Sumner	1.13	Alteration in stream-side or littoral vegetative cover Chlorine Sludge L L L	Municipal Point Source Discharges from MS4 area	Stream is Category 5. (One or more uses impaired.)
TN05130202 001T - 0700	UNNAMED TRIB TO CHEATHAM RES.	Davidson	1.0	Iron Total Dissolved Solids L L	Landfills	Stream is Category 5. (One or more uses impaired.)
TN05130202 001T - 0800	DAVIDSON BRANCH	Davidson	2.83	Escherichia coli M	Discharges from MS4 area Collection System Failure	Stream is Category 5. (One or more uses impaired.)
TN05130202 001T - 0900	OVERALL CREEK	Davidson	7.83	Flow Alteration Loss of biological integrity due to siltation NA L	Highway, Road, Bridge Construction	Category 5. (One or more uses impaired.) Flow alteration is 4c (not caused by pollutant.

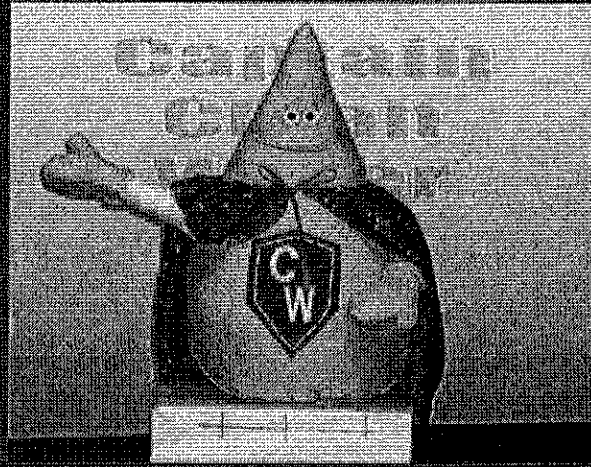




# EPA MyWaters Mapper

Jenkings



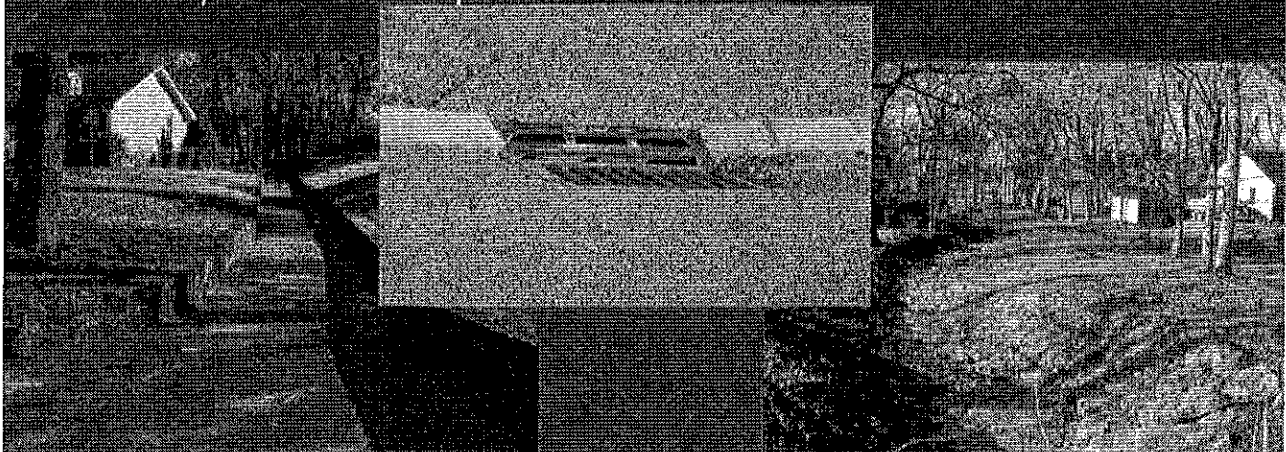


# City of Hendersonville

## Stormwater Education Program

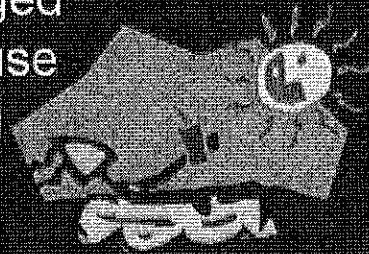
### What is Stormwater Runoff?

- Stormwater runoff is precipitation from rain that flows over the ground.
- As stormwater flows over driveways, lawns, and sidewalks, it picks up debris, chemicals, dirt, and other pollutants.





- The storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.



- Polluted runoff is the nation's greatest threat to clean water.



- Polluted stormwater is referred to as **nonpoint source pollution**.

*Stopping pollution at its source will require all of us to make changes!*

### 3 Focus Groups for Changes:

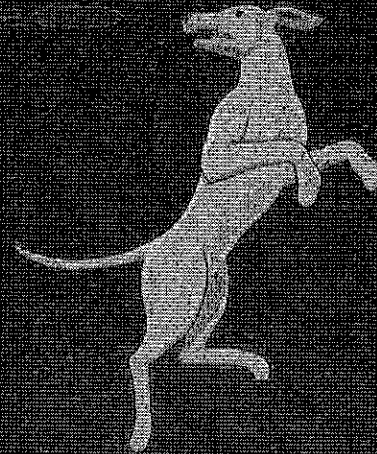
- Citizens
- Businesses and Industries
- Construction Companies



# PET CARE

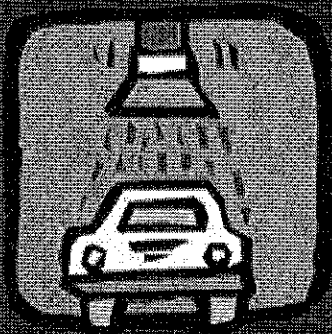
***The best place for each of us to begin to prevent stormwater pollution is in our own home and in our own backyard!***

- Pick up pet waste and dispose of it properly.
- Leaving pet waste on the ground increases public health risks.

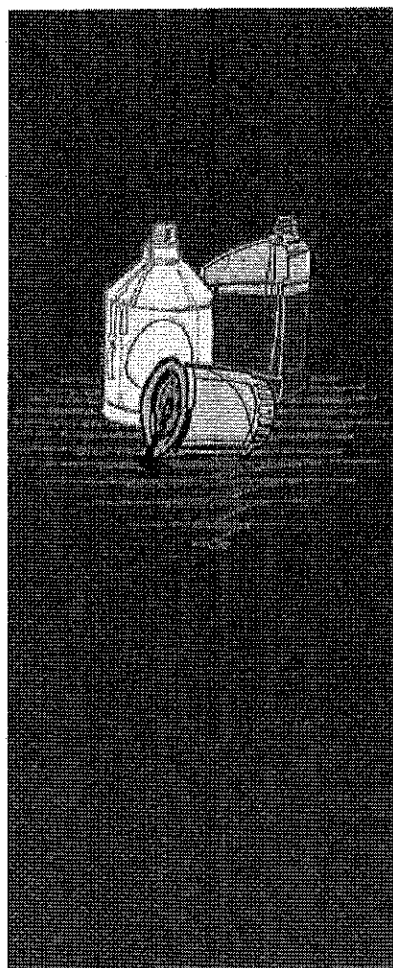


# VEHICLE AND GARAGE

- Use a car wash or wash your car on a lawn or unpaved surface.
- Inspect and maintain your car, boat, motorcycle, and lawnmowers for leaks of oil, antifreeze and other fluids.



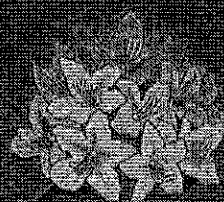
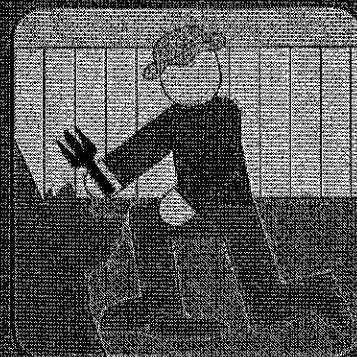


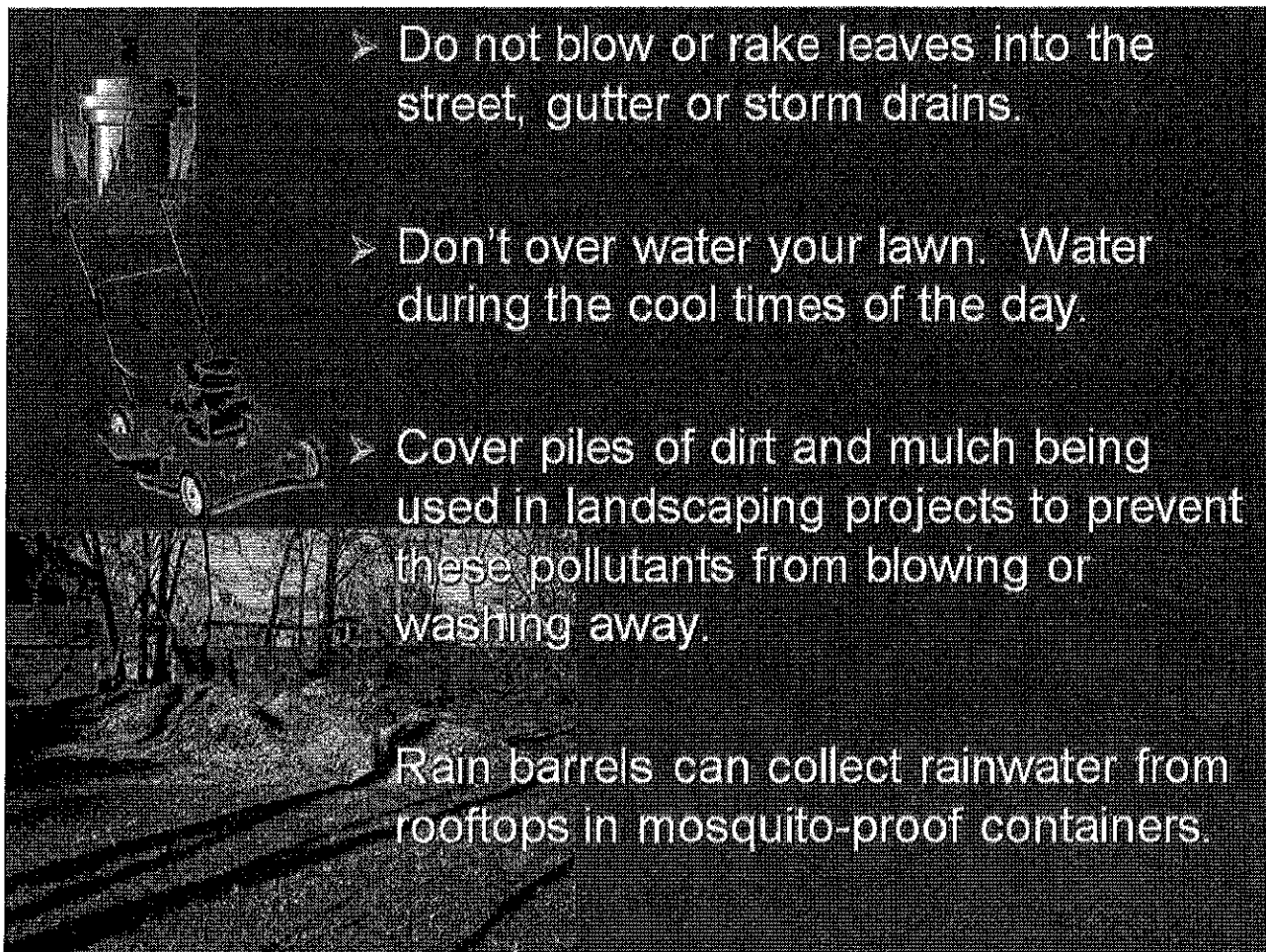


- ***Do not dump automotive fluids into the storm drain!***
- Used kitty litter to clean up leaks and spills.
- Reduce automobile use by carpooling, riding the bus, or walking.

## LAWN AND GARDEN

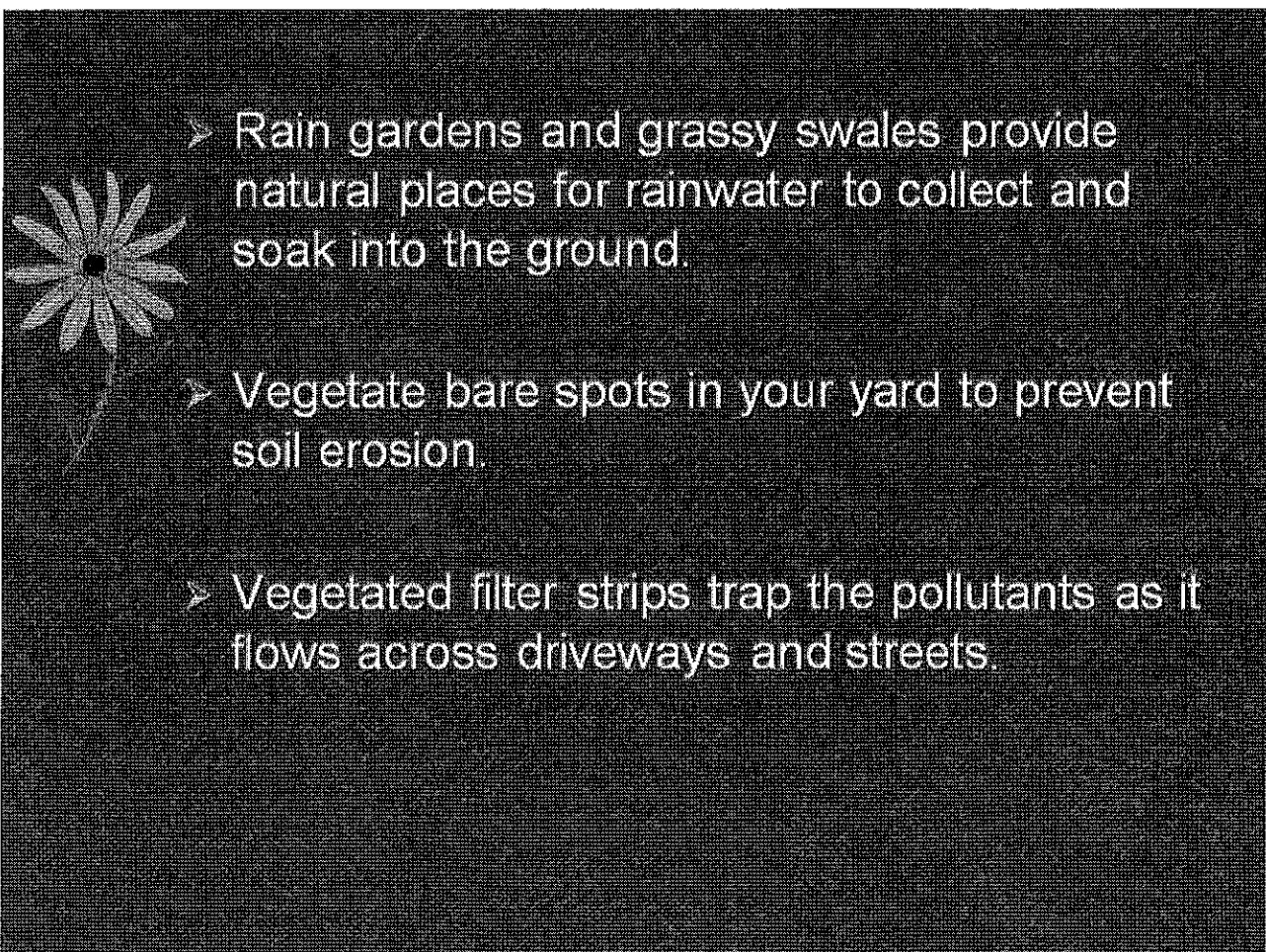
- Use pesticides and fertilizers sparingly.
- Avoid application if the forecast calls for rain.
- Select native plants and grasses that are drought and pest resistant.





- Do not blow or rake leaves into the street, gutter or storm drains.
- Don't over water your lawn. Water during the cool times of the day.
- Cover piles of dirt and mulch being used in landscaping projects to prevent these pollutants from blowing or washing away.

Rain barrels can collect rainwater from rooftops in mosquito-proof containers.

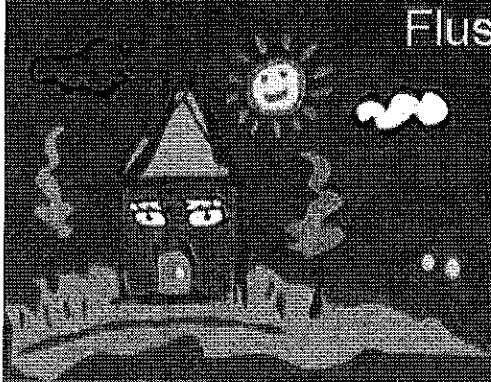


- Rain gardens and grassy swales provide natural places for rainwater to collect and soak into the ground.
- Vegetate bare spots in your yard to prevent soil erosion.
- Vegetated filter strips trap the pollutants as it flows across driveways and streets.



# SEPTIC SYSTEMS

- Inspect your system every 3 years and pump your tank as necessary (every 3-5 years).
- Care for the septic system drain field by not driving or parking vehicles on it.



Flush responsibly! Do not flush chemicals, diapers, paper towels or cat litter.

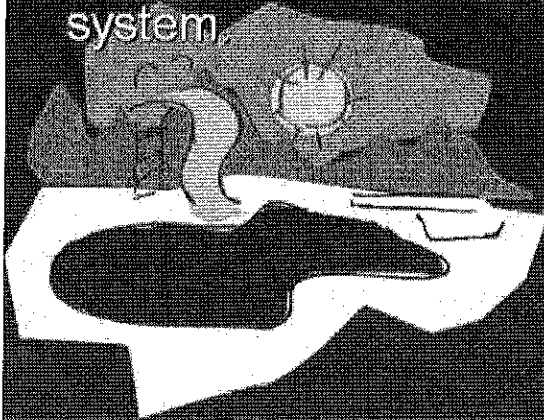
# HOME REPAIR & IMPROVEMENT

- Use hazardous substances like paints, solvents, and cleaners in the smallest amounts possible, and follow the directions on the label.
- Clean up spills immediately, and dispose of the waste safely. Store substances properly to avoid leaks and spills.
- Clean paint brushes in a sink, not outdoors. Filter and reuse paint thinner when using oil-based paints.



# SWIMMING POOL AND SPA

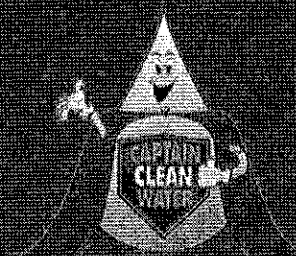
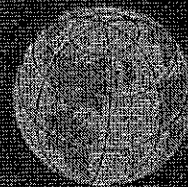
- Drain your swimming pool only when a test kit does not detect chlorine levels.
- Whenever possible, drain your pool or spa into the sanitary sewer system
- Filter backwash should drain into the sanitary sewer system.



- Properly store pool and spa chemicals to prevent leaks and spills, preferably in a covered area.

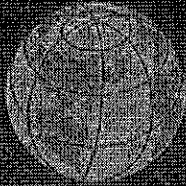
# MORE THINGS YOU CAN DO TO PREVENT POLLUTION...

- Remember to reduce, reuse, and recycle all materials whenever possible.
- Volunteer to stencil a storm drain!
- If you would like more information, contact the City of Hendersonville Public Works Department.



# Contact Information

- Emergency spill response & hazardous waste —  
Trace Buerkett — 973-3612
- Storm Water - Jerry Daniels 335-9469
- Resource Authority 452-4637





# **The City of Hendersonville**

## **Public Works Department**

### **NPDES Storm Water Quality Program**

On March 10, 2003 the City of Hendersonville was required by the State of Tennessee to obtain a National Pollution Discharge Elimination System (NPDES) Permit for its discharges of Storm Water runoff through the City's Municipal Separate Storm Sewer System. Over the next few years several new programs will come to light relating to stormwater quality as the City takes a larger role in protecting one of our most valuable natural resources.

#### **Public Education**

- Presentations on water quality to schools, adults, developers, commercial and industrial users
- Water quality hotline (615-590-4652) for issues or complaints
- Website available for information [www.hvilletn.org/Dept/PW/pubworks.htm](http://www.hvilletn.org/Dept/PW/pubworks.htm)

#### **Public Participation**

- Provide an opportunity for the public to get involved!
- Storm Water Advisory Committee
- Stream clean-up groups, storm drain marking program and volunteer stream monitoring

#### **Illicit Discharge Detection and Elimination**

- Adoption of Illicit Discharge Ordinance
- Household hazardous collection program
- Public education for illicit discharges and septic tanks

#### **Construction Site Runoff Program**

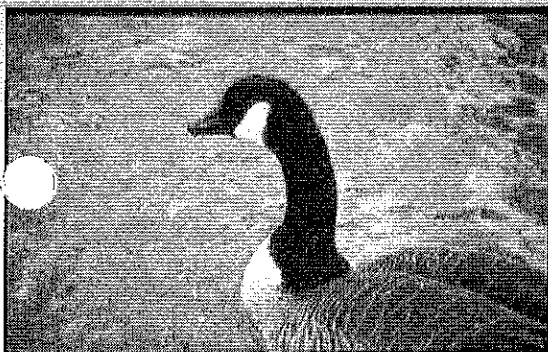
- Adoption of Land Disturbance Ordinance
- Establish Soil Erosion Control Plan review procedures, enforcement policies, procedures and penalties
- Develop Best Management Practices (BMPs) for construction site phasing and clearing

#### **Post Development Runoff**

- Adoption of Post-construction Runoff Ordinance
- Develop Post-construction BMPs
- Develop BMP maintenance agreements, requirements, inspection procedures and enforcement strategy

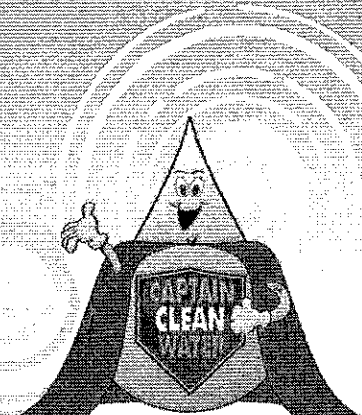
#### **Pollution Prevention and Good Housekeeping**

- Develop storm water standard operating procedures
- Develop procedures to reduce pollutants from streets, roads, and highways
- Develop procedures to reduce pollutants by basin/inlet cleaning, street sweeping and ditch maintenance



**For more information contact:**  
**Hendersonville Public Works**

**Jerry Horton**  
**615-822-1016**





# After the Storm

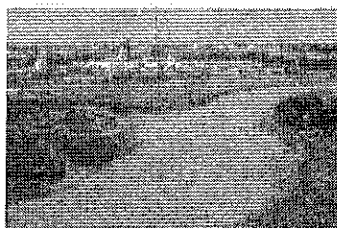
## A Citizen's Guide to Understanding Stormwater



## The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- ♦ Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- ♦ Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- ♦ Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.
- ♦ Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- ♦ Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.



## What is stormwater runoff?



Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

## Why is stormwater runoff a problem?



Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.



For more information contact:

Jerry Horton  
City of Hendersonville Public Works  
One Executive Park Drive  
Hendersonville, TN 37075  
(615) 822-1016  
jhorton@hvilletn.org

or visit  
[www.epa.gov/npdes/stormwater](http://www.epa.gov/npdes/stormwater)  
[www.epa.gov/nps](http://www.epa.gov/nps)



615-633-8330

1-800-424-6330



# Stormwater Pollution Solutions

## Residential

*Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.*

### Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

- Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- Cover piles of dirt or mulch being used in landscaping projects.



### Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.



*Education is essential to changing people's behavior. Signs and newsletters near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody.*

## Residential landscaping

**Permeable Pavement**—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.

**Rain Barrels**—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.

**Rain Gardens and Grassy Swales**—Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.



**Vegetated Filter Strips**—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.



### Septic systems

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- Don't dispose of household hazardous waste in sinks or toilets.



### Pet waste

Pet waste can be a major source of bacteria and excess nutrients in local waters.

- When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.



Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls, and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.

## Commercial

## Construction

## Agriculture

Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.

- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.

## Forestry

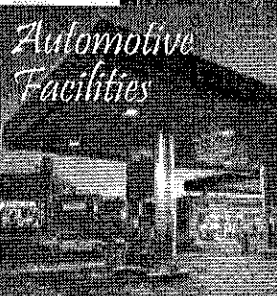
Improperly managed logging operations can result in erosion and sedimentation.

- Conduct preharvest planning to prevent erosion and lower costs.
- Use logging methods and equipment that minimize soil disturbance.
- Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- Construct stream crossings so that they minimize erosion and physical changes to streams.
- Expedite revegetation of cleared areas.

## Automotive Facilities

Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

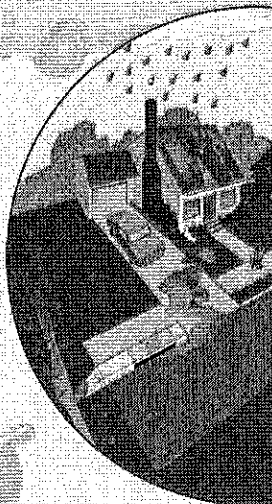
- Clean up spills immediately and properly dispose of cleanup materials.
- Provide cover over fueling stations and design or retrofit facilities for spill containment.
- Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- Install and maintain oil/water separators.





Make your home  
The  
**SOLUTION  
TO STORMWATER  
POLLUTION!**

*A homeowner's guide to healthy  
habits for clean water*



**Remember: Only rain down the drain!**

For more information, visit  
[www.epa.gov/nps/stormwater](http://www.epa.gov/nps/stormwater)  
or  
[www.epa.gov/nps](http://www.epa.gov/nps)

Jerry Horton  
City of Hendersonville Public Works  
One Executive Park Drive  
Hendersonville, TN 37075  
(615) 822-1016, [jhorton@hvills.org](mailto:jhorton@hvills.org)



Internet Address (URL) • [HTTP://www.epa.gov](http://www.epa.gov)  
Recycled/Recyclable • Printed With Vegetable Oil Based Inks on 100% Postconsumer,  
Process Chlorine Free Recycled Paper

#### **Pet Care**

- When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

#### **Swimming Pool and Spa**

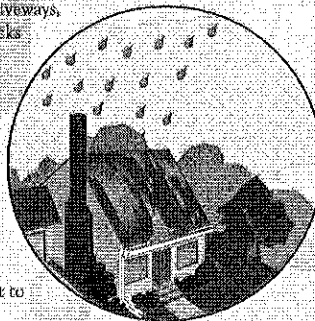
- Drain your swimming pool only when a test kit does not detect chlorine levels.
- Whenever possible, drain your pool or spa into the sanitary sewer system.
- Properly store pool and spa chemicals to prevent leaks and spills, preferably in a covered area to avoid exposure to stormwater.

#### **Septic System Use and Maintenance**

- Have your septic system inspected by a professional at least every 3 years and have the septic tank pumped as necessary (usually every 3 to 5 years).
- Care for the septic system drained by not driving or parking vehicles on it. Plant only grass over and near the drainfield to avoid damage from roots.
- Flush responsibly. Flushing household chemicals like paint, pesticides, oil, and antifreeze can destroy the biological treatment taking place in the system. Other household dangers, paper towels, and cat litter, can clog the septic system and potentially damage components.

*Storm drains connect to waterbodies!*

As stormwater flows over driveways, lawns, and sidewalks, it picks up debris, chemicals, dirt, and other pollutants. Stormwater can flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water. Polluted runoff is the nation's greatest threat to clean water.

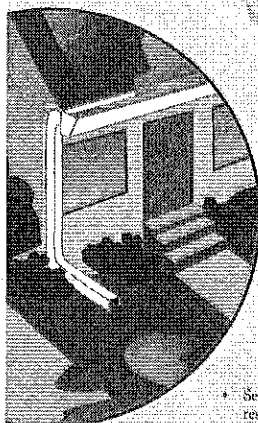


By practicing healthy household habits, homeowners can keep common pollutants like pesticides, pet waste, grass clippings, and automotive fluids off the ground and out of stormwater. Adopt these healthy household habits and help protect lakes, streams, rivers, wetlands, and coastal waters. Remember to share the habits with your neighbors!

## Healthy Household Habits for Clean Water

### Vehicle and Garage

- Use a commercial car wash or wash your car on a lawn or other pervious surface to minimize the amount of dirty, soapy water flowing into the storm drain and eventually into your local waterbody.
- Check your car, boat, motorcycle, and other machinery and equipment for leaks and spills. Make repairs as soon as possible. Clean up spilled fluids with an absorbent material like kitty litter or sawdust, and don't rinse the spills into a nearby storm drain. Remember to properly dispose of the absorbent material.
- Recycle used oil and other automotive fluids at participating service stations. Don't dump these chemicals down the storm drain or dispose of them in your trash.

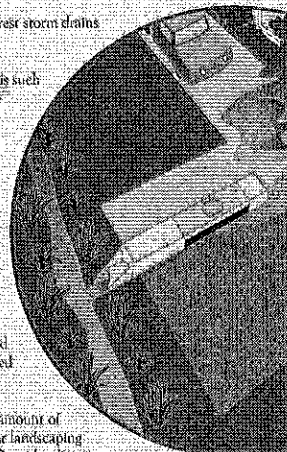


### Lawn and Garden

- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals at the recommended amounts. Avoid application if the forecast calls for rain; otherwise, chemicals will be washed into your local stream.
- Select native plants and grasses that are drought- and pest-resistant. Native plants require less water, fertilizer, and pesticides.
- Sweep up yard debris, rather than hosing down areas. Compost or recycle yard waste when possible.
- Don't overwater your lawns. Water during the cool times of the day, and don't let water run off into the storm drain.
- Cover piles of dirt and mulch being used in landscaping projects to prevent these pollutants from blowing or washing off your yard and into local waterbodies. Vegetate bare spots in your yard to prevent soil erosion.

### Home Repair and Improvement

- Before beginning an outdoor project, locate the nearest storm drains and protect them from debris and other materials.
- Sweep up and properly dispose of construction debris such as concrete and mortar.
- Use hazardous substances like paints, solvents, and cleaners in the smallest amounts possible, and follow the directions on the label. Clean up spills immediately, and dispose of the waste safely. Store substances properly to avoid leaks and spills.
- Purchase and use nontoxic, biodegradable, recycled, and recyclable products whenever possible.
- Clean paint brushes in a sink, not outdoors. Filter and reuse paint thinner when using oil-based paints. Properly dispose of excess paints through a household hazardous waste collection program, or donate unused paint to local organizations.
- Reduce the amount of paved area and increase the amount of vegetated area in your yard. Use native plants in your landscaping to reduce the need for watering during dry periods. Consider directing downspouts away from paved surfaces onto lawns and other measures to increase infiltration and reduce polluted runoff.



## PROPERTY OWNERS WITH FLOODING OR DRAINAGE PROBLEMS

### *To protect your property:*

- Relocate or elevate heating units and air conditioners out of harm's way
- Move sheds and dog houses out of the path of floodwater
- Buy flood insurance for your structure and contents

### *To protect yourself:*

- Be aware of flood watches and warnings issued by the National Weather Service
- Pay attention to creek levels when heavy rain falls
- Call 911 immediately if you see street flooding or see creek levels rise rapidly
- Don't drive through rushing or standing water

## SERVICES NOT PROVIDED BY STORM WATER

- Clean up sticks, leaves or debris left on private property after heavy rain or flooding
- Repair or replace private property that is damaged by storm water runoff or flooding. Examples include air conditioners, heating units, fences, walls, gardens, lawns, shrubs, swimming pools, mail boxes and dog houses
- Mow a storm drainage easement on private property
- Clear out incidental debris from creeks and drainage ditches such as trash, leaves, grass clippings or small tree branches
- Clear cut vegetation from creek banks as part of routine maintenance
- Re-grade or re-seed a storm drainage easement after a project's warranty period

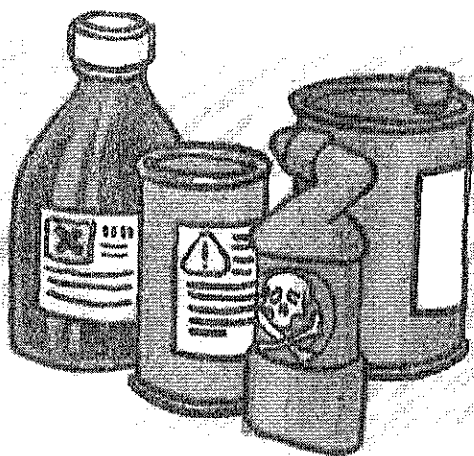
## DRAINAGE OR FLOODING PROBLEMS THAT TYPICALLY DO NOT QUALIFY FOR STORM WATER SERVICES' REPAIRS INCLUDE:

- Yard flooding
- Drainage problems caused by landscaping or yard grading
- Standing water from groundwater conditions
- Standing water in drainage channels
- Roof/gutter drainage system problems
- Runoff from adjacent properties
- Minor erosion
- Developments with a certificate of occupancy one year old or less
- Vacant properties
- Any non-single-family development BMPs and maintenance (required by property owners) of post-construction/required facilities
- Mitigation/stream restoration projects completed by others
- Bury pits
- Pipes and fill that should have been permitted but were not
- Wetlands that do not adversely affect storm drainage systems

## SERVICES AT A GLANCE

*Storm Water Services works to provide a storm drainage system that is safe, clean and cost-effective. To accomplish that goal Storm Water will:*

- ◇ Inspect drainage or flooding problems on public and private property to determine if they are caused by storm water runoff from a public street and are qualifying problems as described by Storm Water Services.
- ◇ Work to resolve or reduce flooding problems. Highest priority are those with flooding of living space, damage or imminent damage to buildings where people live or work, or flooding that poses a threat to the traveling public.
- ◇ Remove fallen trees and large debris from creeks when those obstructions create a qualifying drainage problem
- ◇ Clean storm drain pipes, catch basins and culverts located within right-of-way
- ◇ Oversee comprehensive program to install larger storm drainage pipes and culverts when necessary
- ◇ Repair or replace broken storm drainage pipes in the right-of-way
- ◇ Map regulated floodplains to determine potential flood risks
- ◇ Manage development in regulated floodplains
- ◇ Operate flood notification system for emergency responders
- ◇ Buy flood-prone properties that meet criteria set by federal emergency officials and convert that land to open space as funds become available



The Sumner County Household Hazardous Waste collection event is Saturday, October 29, 2016 from 9:00 a.m. to 2:00 p.m. at Volunteer State Community College, 1480 Nashville Pike, Gallatin, TN

### **Acceptable items include:**

**Automobile and Marine Products:** oil and fuel additives, grease and rust solvents, naval jelly, carburetor and fuel injector cleaners, starter fluids, body putty, antifreeze/coolant and gasoline.

**Home Maintenance/Improvement Products:** used strippers and thinners, adhesives, driveway sealant, roofing tar and wallpaper remover.

**Home Lawn and Garden Products:** pesticides, fertilizers and wood preservatives.

**Miscellaneous:** pool chemicals, photo processing chemicals, medicines/drugs, aerosols/compressed gas, mercury thermostats and thermometers, fluorescent tubes, compact fluorescent bulbs and needles and sharps (in a puncture-proof container)

### **Unacceptable items include:**

**Medical/Biological:** infectious wastes, dead animals and any waste from a doctor's office, clinic or veterinarian's office.

**Explosives/Ammunition:** fireworks, military ordnance, gun powder, and ammunition.

**Radioactives:** smoke detectors and radium paint.

**Business/Institutional Waste:** no businesses, large or small, no colleges or universities, no schools, no hospitals, no home improvement or painting contractors and no agribusiness.

**Miscellaneous:** empty containers of any kind, automotive gas tanks, alkaline batteries (may be thrown away in the trash), electronics and paint.



## Water Education Teacher Workshop at Montgomery Bell State Park

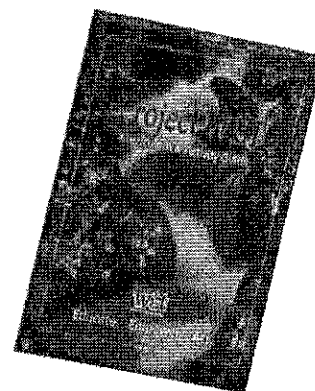
July 22, 2016  
9:00 am – 4:00 pm

**Who is invited?** Anyone who provides education to students in grades 3-12; public/private/homeschool teachers and parents; educational staff of parks, museums and educational centers.

**With fun, hands-on activities,** you'll learn about Tennessee's water resources and how your students can be environmental stewards.

**Explore a stream** and see, first hand, the life that depends on our maintaining water quality. Bring water shoes (old sneakers are best) and wear shorts.

- **Registration:** Please pre-register by contacting Michelle Rogers at [rogersm@apsu.edu](mailto:rogersm@apsu.edu) or (931) 221-6480
- Registration **deadline:** July 13, 2016
- **Cost:** \$10.00 Nonrefundable check made out to **APSU** and sent to:  
Project WET, P.O. Box 4718, Clarksville, TN 37044
- Lunch provided at the restaurant in the park's Inn

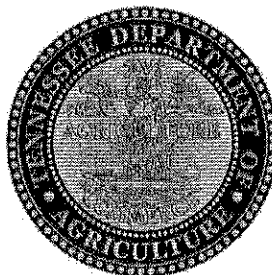


### Receive FREE classroom materials and learn how to use them:

- *Project WET Curriculum & Activity Guide* and online resources
- Water chemistry test kit on request
- Classroom set of children's *Discover the Waters of Tennessee* (designed for grades 3-5)
- More, including TN watershed maps, posters, and children's literature books

Correlations to TN curriculum standards and common core for all workshop activities will be available.

**AP Austin Peay**  
State University  
Center of Excellence  
for Field Biology



Sponsored by the Tennessee Dept. of Agriculture and the APSU Center of Excellence for Field Biology



IMMEDIATE RELEASE

***The City of Goodlettsville is Hosting a Community-Wide Stream Clean-Up Event***

**Goodlettsville, TN (September 17, 2016)** – The city of Goodlettsville is hosting a community-wide stream clean-up event on Saturday, September 17, 2016, from 9:00 a.m. to noon. **All participants will meet at the Public Works Department @ 215 Cartwright Street in Goodlettsville and will then proceed to staging areas that will be throughout the City of Goodlettsville.** Gloves, bags, t-shirts, snacks, certificates, and the opportunity to help make a difference in your local community and watershed, are provided!

Your community's stormwater department and local volunteers, such as yourself, are working together to clean up and maintain the area's water resources, Slater's Creek, Mansker Creek, and Dry Creek are impaired urban streams that are in need of community action.

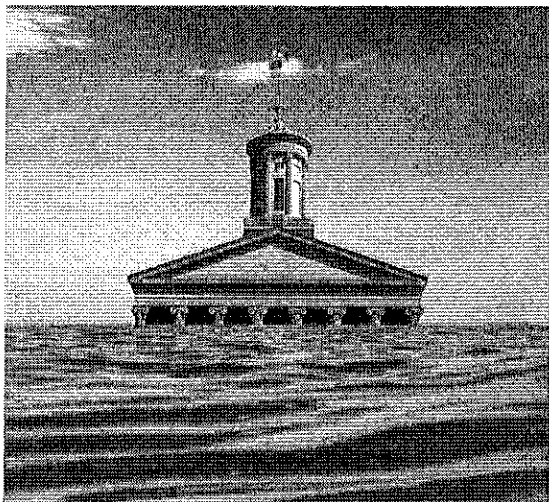
"The community involvement in this area is exceptional. This clean-up helps our community meet our annual MS4 public participation requirement from TDEC as well as bring local volunteers together with a common goal." "We want to make a positive difference, so we've come together to organize a true, community-wide event"

Citizens who are interested in local water quality and the health of our local water bodies are also encouraged to contact us on the websites "Notify Me" or our main office. <http://goodlettsville.gov> or [wgarrett@goodlettsville.gov](mailto:wgarrett@goodlettsville.gov)

For more information:  
Sherry Montgomery- Administrative Assistant II  
Warren Garrett- Stormwater Coordinator  
(615) 859-2740



# National Flood Insurance Program Administrative and Legislative Training



This is a free four-hour floodplain management training course that is being held throughout the state, but you must register to attend.

This course is designed to provide a training opportunity for local officials responsible for administering their local floodplain management ordinance.

The course will focus on the National Flood Insurance Program (NFIP) and concepts of floodplain management, maps and studies, ordinance administration, elevation certificates, and recent federal legislation changes effecting flood insurance.

Dates	Locations
August 9	Kingsport - Kingsport Center for Higher Education
August 10	Knoxville - University of Tennessee - Conference Center
August 11	Collegedale - Collegedale City Hall
August 16	Nashville - TBI Headquarters
August 17	Jackson - UT - West Tennessee Research & Education Center
August 18	Memphis - Memphis Office of Talent Development

 Register Online

[www.mtas.tennessee.edu](http://www.mtas.tennessee.edu)

This is a free course, but you must register online.

All class times are

8:30 am - 12:30 pm in their respective time zone.

Program questions? Please contact:



Dr. Chris Shults at (865) 974-8964



[chris.shults@tennessee.edu](mailto:chris.shults@tennessee.edu)

Registration questions? Please contact:

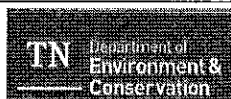


Patrick Mills (865) 974-9833



[patrick.mills@tennessee.edu](mailto:patrick.mills@tennessee.edu)

Hosted by:



 County Technical  
Assistance Service  
INSTITUTE FOR  
PUBLIC SERVICE

 Municipal Technical  
Advisory Service  
INSTITUTE FOR  
PUBLIC SERVICE

April 16, 2016

[COMMUNITY/STREAM CLEANUP]

<u>Litter Bags/Trash</u>	<u>Total lbs.</u>
--------------------------	-------------------

1. Williamson Rd./Mansker Creek

- |                             |            |
|-----------------------------|------------|
| a. 35 Bags                  | 1,400 lbs. |
| b. Other Items              |            |
| Pvc pipe, car bumper, tire  |            |
| Wood scraps, bucket         |            |
| Metal shingles, closet door | 250 lbs.   |

2. Northcreek Park/Mansker Creek/Kroger

- |                                |                 |
|--------------------------------|-----------------|
| a. 44 Bags                     | 1,760 lbs.      |
| b. Other Items                 |                 |
| Tire, hubcap, trash can        |                 |
| Floor strip, wire, two buckets |                 |
| Bedding, sleeping bag          | <u>150 lbs.</u> |

<u>TOTAL</u>	<u>3,560 lbs.</u>
--------------	-------------------

3. Volunteers:

Youth	9
Adults	<u>23</u>

<u>TOTAL</u>	<u>32</u>
--------------	-----------

Thank you Volunteers

Boy Scout Troop

OHM

Ambassadors

Citizen Volunteers

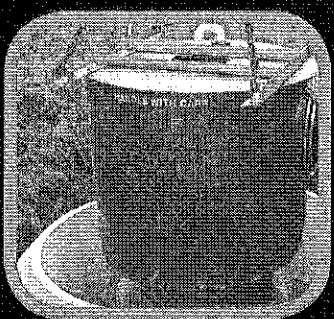
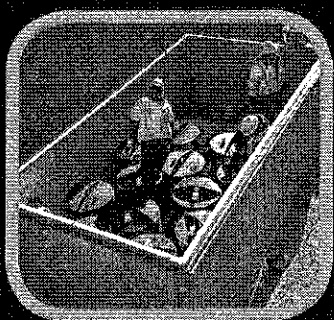
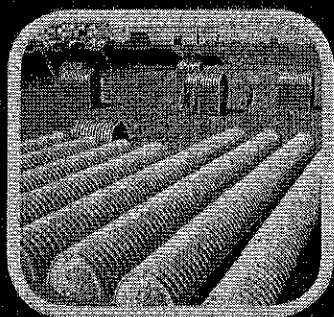
Sponsors

Benchmark Realty

Metro Beautification

City of Goodlettsville

City of Millersville



# NASHVILLE STORMWATER MANAGEMENT SEMINAR 2016

**WEDNESDAY, APRIL 27<sup>TH</sup>, 2016**

**Embassy Suites**

**820 Crescent Centre Drive**

**Franklin, TN 37067**

Lunch and 4 Professional Development Hours will be provided.  
Everyone is entered into a drawing for a chance to win a prize.

*Sharpen your skills and enhance your knowledge of Water Quality devices including; separation, media filtration, hydrodynamic separation, detention/infiltration, and review and discussion of state and local regulations.*

## **SEMINAR AGENDA:**

- |                         |                                                                                                                             |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 11:00 a.m. - 11:30 a.m. | Registration                                                                                                                |
| 11:30 a.m. - 12:00 p.m. | Lunch                                                                                                                       |
| 12:00 p.m. - 12:30 p.m. | MS4 Compliance Discussion<br><i>Special guest speaker</i>                                                                   |
| 12:30 p.m. - 1:00 p.m.  | ADS Introduction<br><i>Brian Mulligan, ADS Territory Mgr. Metro Nashville</i>                                               |
| 1:00 p.m. - 2:00 p.m.   | BaySaver WQ solutions: BayFilter™ & BaySeparator™<br><i>Brian Rustia, BaySaver National Sales &amp; Engineering Mgr.</i>    |
| 2:00 p.m. - 2:30 p.m.   | ADS Water Quality Units & Hydro International®<br><i>Sandy Camargo, ADS Engineered Products Mgr. KY/TN</i>                  |
| 2:30 p.m. - 3:00 p.m.   | FLEXSTORM® Inlet Filters<br><i>Daniel Lockart, ADS Allied Products Mgr. KY/TN</i>                                           |
| 3:00 p.m. - 3:30 p.m.   | Water Quality & Stormwater Pipe<br><i>Shawn Coombs, ADS Southern Zone Engineer/National Railroads</i>                       |
| 3:30 p.m. - 4:15 p.m.   | StormTech® Isolator™ Row and Rainwater Harvesting<br><i>Sandy Camargo, ADS Engineered Products Mgr. KY/TN Sandy Camargo</i> |

Please RSVP by **April 22, 2016** to:

**Brian Mulligan at 615-330-2307 or [brian.mulligan@ads-pipe.com](mailto:brian.mulligan@ads-pipe.com)**

**Advanced Drainage Systems, Inc.**  
[www.ads-pipe.com](http://www.ads-pipe.com)

Advanced Drainage Systems and the Green Stripe are registered trademarks of Advanced Drainage Systems, Inc. FLEXSTORM® is a registered trademark of Inlet & Pipe Protection, Inc. StormTech® and Isolator™ Row are registered trademarks of StormTech, Inc. BayFilter® and BaySeparator® are registered trademarks of BaySaver Technologies, Inc. Hydro International® is a registered trademark of Hydro International.  
© 2016 Advanced Drainage Systems, Inc. 03/16 AF

**TENNESSEE STORMWATER ASSOCIATION  
ANNUAL CONFERENCE**

**SCHEDULE AT A GLANCE**

**Fall Creek Falls State Park  
October 18 - 20, 2016**

**GO WITH THE FLOW**





# GO WITH THE FLOW

## OCTOBER 18, 2016

8:00 AM – 4:00 PM	Registration Open
10:00 AM	Kickoff Kickball Game – Softball Field (Next to ZipLine Course)
12:00 PM	Lunch – Park Restaurant
1:00 PM	TNSA Annual Membership Meeting
2:00 PM – 4:00 PM	MS4 101: Learning from Each Other*
4:00 PM	TNSA Board of Directors Meeting
1:00 PM – 6:00 PM	Exhibit Hall Set-Up
6:00 PM	Dinner – Park Restaurant
8:00 PM	TNSA Member Reception

## OCTOBER 19, 2016

7:30 AM	Breakfast – Park Restaurant	
8:00 AM	Registration Open	
	Exhibit Hall Open 8:00 AM – 5:00 PM	
8:30 AM – 9:30 AM	<b>Welcome – Crystal Bishop, TNSA President</b> <b>Keynote Address – Dr. David Etnier</b>	
9:30 AM – 10:00 AM	Break with Exhibitors	
10:00 AM – 11:30 AM	<b>Technical Session I*</b>	
	Room 1 - MS4 Program Management	Room 2 - Permanent BMPs
10:00 AM	Paul Davis - Legislation and MS4 Permits	Kevin Wolfe & Scott Gorneau - Field Testing of High Performance Modular Bioinfiltration System
10:30 AM	Rebecca Dohn - LID or Bust	Sandy Camargo - When it Absolutely Positively Has To Be 80% TSS
11:00 AM	Ward Marotti - Turning Liabilities into Assets	Mark Miller - It is Time for a National Stormwater Testing and Evaluation Program
11:30 AM – 1:00 PM	Lunch – Restaurant	
1:00 PM – 2:30 PM	<b>Technical Session II *</b>	
	Room 1 - Installation, Operation and Maintenance	Room 2 - Public Education
1:00 PM	Doug Noonan - Successful Installation of Green Infrastructure	Missy Marshall - KTnB & the KAB Affiliate Network
1:30 PM	Parcel Gibson - O&M of SCMs ... Oh My!	Ellen Moore - Public Education - Partnering with Schools
2:00 PM	Jeff Willoughby - Long Term Maintenance Agreements	Jennifer Norton - Chattanooga East Lake: Using Grants to Foster Partnerships with Schools

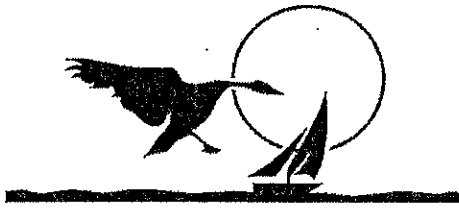
# GO WITH THE FLOW

2:30 PM – 3:00 PM	Break with Exhibitors	
3:00 PM – 4:30 PM	Technical Session III *	
	Room 1 - IDDE	Room 2 - MS4 Program Management
3:00 PM	Phil Rhodes - IDDE Program Design and Lessons Learned	Josh Hayes & Michael Hunt - The Nashville Program 4.0
3:30 PM	Don Green – Smoke Testing and Chattanooga's IDDE Program	Stephanie Carlson - Using Resources Creatively to Get Things Done In a Small MS4
4:00 PM	Cathy Olsen & Tracy Jones - Using GIS to Support the IDDE Program in Knox County	Mary Halley - Offsite BMP Program for Sediment Impairments
6:00 PM	Dinner – Restaurant	
7:30 PM	Bonfire Social – Top of the Hill	
OCTOBER 20, 2016		
7:30 AM	Breakfast – Park Restaurant	
8:00 AM – 1:00 PM	Exhibit Hall Open	
9:00 AM – 10:30 AM	Technical Session IV*	
	Room 1 - Public Education	Room 2 - Water Resource Restoration & Preservation
9:00 AM	Tasha King-Davis - Go Go Green Infrastructure!	Ken Barry & Patrick McMahon - Stream Restoration and Green Infrastructure: Integration for Watershed Stewardship
10:00 AM	Jason Foster and Ingrid Luffman - Johnson City Library Green Development Project	Jeff Shaver & Steve Casey - Hydrological Model Calibration and 2D Hydraulic Analysis of Ralston Creek
10:30 AM	Roy Arthur - EPA Nine Element Watershed Planning	David Mason & Zack Daniel - Lake Preservation - Lessons Learned in Hydraulic Dredging of Jackson Lake
11:00 AM – 11:30 AM	Graduate Student Poster Presentations – Exhibit Hall	
	Break with Exhibitors	
11:30 AM – 1:00 PM	Lunch – Restaurant	
1:00 PM – 2:30 PM	Technical Session V *	
	Room 1 – Technology Tools	Room 2 - Permanent BMPs
1:00 PM	Chris Masin - Inspections via Tablet	Andrew Tirpak - Investigating the Treatment Performance Benefits of Trees in Stormwater
1:30 PM	Brittani Perez - Increasing Inspection Efficiency the Digital Way	Alan Sparkman - Pervious Concrete: Latest in Design, Installation, Maintenance & Cleaning

# GO WITH THE FLOW

2:00 PM	Justin Bryan - GIS for Stream Assessment and Corrective Action Planning	Andrea Ludwig - Making UT Green: Soaking In Runoff and Knowledge with Experience
3:00 PM	<b>Technical Session VI *</b> <b>TDEC Panel Discussion</b>	

\*Denotes PDHs Available.



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION - WARNING**

Date: 01/20/2016

Jeff Michaels  
106 Celebrity Drive  
Tupelo, Mississippi 38804

RE: Celebrity Coaches-110 Tennessee Way, Hendersonville, Tennessee

Dear Mr. Michaels:

On 1/5/2016, a City of Hendersonville Erosion Control Inspection Review revealed that there were several erosion control deficiencies at the 110 Tennessee Way construction site. The site contact, Mr. Keith Groves, was notified of the deficiencies and given sufficient time to address the issues. The site contact was advised to install rip rap or a ring filter at the HDPE pipe on the Southwest side of the site where there is a headwall leading to a stream. The headwall on the North side of the construction entrance needs to have an extensive amount of debris removed. The Northwest headwalls need attention with silt fence repair and a rock check dam. In addition to the erosion control deficiencies listed, the City of Hendersonville also requests an updated Erosion Control Plan.

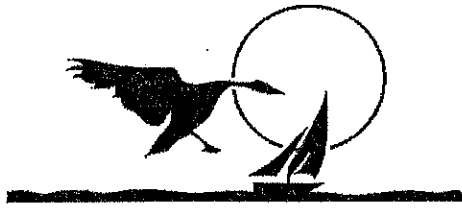
On 1/19/2016, an Erosion Control Inspection was conducted and revealed that the deficiencies were not addressed. Please fix the erosion control deficiencies by 1/28/16. Failure to comply with the City of Hendersonville's Erosion Control standards could result in possible fines.

This letter does not negate any other deficiencies and violations found during the inspection review process. If there are any questions concerning the results of this inspection review, please contact me at (615)590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville





**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION - WARNING**

Date: 01/20/2016

K&J Associates, Inc.  
2165 Liebengood Road  
Goodlettsville, Tennessee 37072

RE: Celebrity Coaches-110 Tennessee Way, Hendersonville, Tennessee

Dear Mr. Groves:

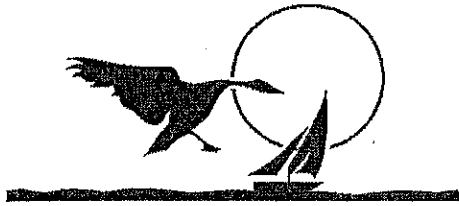
On 1/5/2016, a City of Hendersonville Erosion Control Inspection Review revealed that there were several erosion control deficiencies at the 110 Tennessee Way construction site. You were notified of the deficiencies and given sufficient time to address the issues. You were advised to install rip rap or a ring filter at the HDPE pipe on the Southwest side of the site where there is a headwall leading to a stream. The headwall on the North side of the construction entrance needs to have an extensive amount of debris removed. The Northwest headwalls need attention with silt fence repair and a rock check dam. In addition to the erosion control deficiencies listed, the City of Hendersonville also requests an updated Erosion Control Plan.

On 1/19/2016, an Erosion Control Inspection was conducted and revealed that the deficiencies were not addressed. Please fix the erosion control deficiencies by 1/28/16. Failure to comply with the City of Hendersonville's Erosion Control standards could result in possible fines.

This letter does not negate any other deficiencies and violations found during the inspection review process. If there are any questions concerning the results of this inspection review, please contact me at (615)590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION - WARNING**

Date: 2/4/2016

Dalamar Homes  
Attn: Lisa Ward  
350 Wilson Pike Circle  
Brentwood, Tennessee 37027

RE: Corner Lot Maple Drive and Indian Lake Road

Dear Ms. Ward:

On 1/21/2016, I met with you and discussed an erosion control deficiency at the Dalamar Construction site at the corner of Indian Lake Road and Maple Drive, Hendersonville, Sumner County, Tennessee. I advised you to install silt fence along the perimeter of the site since the existing fence had been removed. On 2/3/2016, the City of Hendersonville Public Works Department received a complaint about sediment in the roadway at the above listed site. I responded to that location and observed an illicit discharge from the site. The illicit discharge from the site is a violation of Hendersonville Municipal Code 18-208 (2). Please fix the erosion control deficiency by **3:00 PM on 2/8/2016** and clean the roadway **immediately**. The City Design Engineer has also requested that you obtain a land disturbance permit for the site. Failure to comply with the City of Hendersonville's erosion control standards could result in immediate suspension of all city inspections, issuance of a stop work order, and/or possible fines.

If there are any questions concerning regarding this notice of violation, please contact me at (615)590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville

7011 2970 0003 258 3173

**CERTIFIED MAIL RECEIPT**  
(Domestic Mail Only; No Insurance Coverage Provided)  
For delivery information visit our website at [www.usps.com](http://www.usps.com)  
**OFFICIAL USE**

Postage	\$ .49
Certified Fee	3.45
Return Receipt Fee (Endorsement Required)	2.80
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.74

Postmark  
Here

Pub. Wks.

Sent to  
**McPherson-Shaw Inc.**  
Street, Apt. No.,  
or PO Box No. **147 Maple Row Blvd #300**  
City, State, ZIP+4<sup>®</sup>  
**Hendersonville, TN 37075**  
PS Form 3800, August 2003 See Reverse for Instructions

**he City of Hendersonville  
epartment of Public Works  
rosion Control**

**F VIOLATION - WARNING**

147 Maple Row Blvd  
Suite 300  
Hendersonville, Tennessee 37075

RE: 222 Bluegrass Drive

Dear Mr. Shaw:

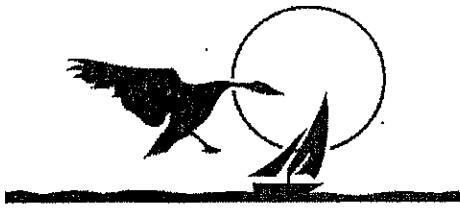
On 1/5/2016, a City of Hendersonville Erosion Control Inspection Review revealed that there was an erosion control deficiency at 222 Bluegrass Circle construction site. The site contact was notified of the deficiency and given sufficient time to address the issue. The site contact was advised to install additional silt fence perimeter on the back section of the site. On 1/19/2016, an Erosion Control Inspection was conducted and revealed that the deficiency was not addressed. Please fix the erosion control deficiency by 1/26/16. Failure to comply with the City of Hendersonville's Erosion Control standards could result in immediate suspension of all city inspections, issuance of a stop work order, or possible fines.

This letter does not negate any other deficiencies and violations found during the inspection review process. If there are any questions concerning the results of this inspection review, please contact me at (615)590-4649.

Sincerely,



Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**SECOND NOTICE OF VIOLATION**

Date: 2/9/2016

Jeff Michaels  
106 Celebrity Drive  
Tupelo, Mississippi 38804

RE: Celebrity Coaches-110 Tennessee Way, Hendersonville, Tennessee

Dear Mr. Michaels:

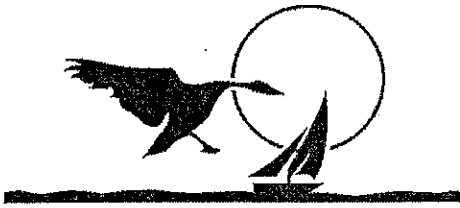
On 2/8/2016, a City of Hendersonville Erosion Control Inspection Review revealed that there are several erosion control deficiencies at the 110 Tennessee Way construction site that have not been fixed. You were notified of the deficiencies and given sufficient time to address the issues. In addition to the erosion control deficiencies, the City of Hendersonville also requested an updated Erosion Control Plan which has not been received. This is your second Notice of Violation for the erosion control deficiencies. The City of Hendersonville Public Works Department is currently obtaining estimates for the cost to correct the erosion control deficiencies on the site. Any work that is completed to correct the deficiencies will be paid using the surety provided to the City of Hendersonville.

You have five business days to correct the erosion control deficiencies and bring the site back into compliance. All work must be completed by **3:00 PM on 2/16/16**. If you have any questions, call 615-590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville





**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**SECOND NOTICE OF VIOLATION**

Date: 2/9/2016

K&J Associates, Inc.  
2165 Liebengood Road  
Goodlettsville, Tennessee 37072

RE: Celebrity Coaches-110 Tennessee Way, Hendersonville, Tennessee

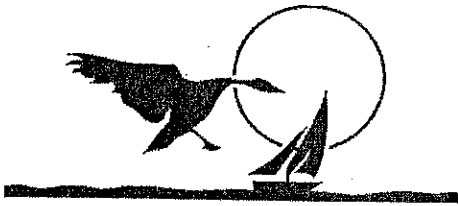
Dear Mr. Groves:

On 2/8/2016, a City of Hendersonville Erosion Control Inspection Review revealed that there are several erosion control deficiencies at the 110 Tennessee Way construction site that have not been fixed. You were notified of the deficiencies and given sufficient time to address the issues. In addition to the erosion control deficiencies, the City of Hendersonville also requested an updated Erosion Control Plan which has not been received. This is your second Notice of Violation for the erosion control deficiencies. The City of Hendersonville Public Works Department is currently obtaining estimates for the cost to correct the erosion control deficiencies on the site. Any work that is completed to correct the erosion control deficiencies will be paid using the surety provided to the City of Hendersonville for the site.

You have five business days to correct the erosion control deficiencies and bring the site back into compliance. All work must be completed by **3:00 PM on 2/16/16**. If you have any questions, call 615-590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION – 2<sup>nd</sup> Warning**

Date: 3/3/16

Elite Properties  
13 Industrial Park Drive  
Suite 400  
Hendersonville, Tennessee 37075

---

RE: 141 Shorecrest Circle

Dear Elite Properties:

On 3/1/16, a city erosion control inspection review revealed that the erosion control deficiencies at 141 Shorecrest Circle, Hendersonville, Sumner County, Tennessee have not been fixed. My inspection occurred during a rain event and I observed an illicit discharge into Old Hickory Lake directly from the site. The illicit discharge from the site is a violation of Hendersonville Municipal Code 18-208 (2). The silt fence needs to be repaired and the slope at the back of the construction site needs to be stabilized by 3/15/16.

Failure to comply with the City of Hendersonville's erosion control standards could result in immediate suspension of all city inspections, issuance of a stop work order, and/or civil penalties.

If there are any questions concerning regarding this notice of violation, contact my office at 615-590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer

Cc: James Kaye



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION - WARNING**

Date: 2/24/2016

Dalamar Homes  
Attn: Lisa Ward  
350 Wilson Pike Circle  
Brentwood, Tennessee 37027

RE: 1006 Peck Place

Dear Ms. Ward:

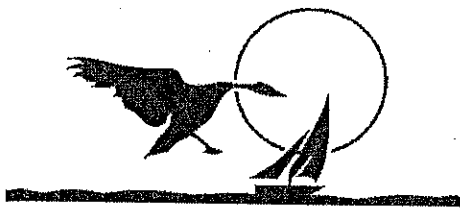
On 2/8/16, I advised you of an erosion control deficiency at the construction site located at 1006 Peck Place, Hendersonville, Sumner County, Tennessee. The silt fence around the site listed above had been removed in preparation for sod installation. An erosion control inspection on 2/22/16 revealed that the erosion control deficiency was not fixed and that the sod has not been installed and no erosion control measures have been installed. Please fix the deficiency **by 3:00 P.M. on 3/3/16.**

The City Design Engineer has also requested that you obtain a land disturbance permit for the site by 3/3/16. Failure to comply with the City of Hendersonville's erosion control standards could result in immediate suspension of all city inspections, issuance of a stop work order, and/or possible fines.

If there are any questions concerning regarding this notice of violation, contact my office at (615)590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION – WARNING**

Date: 2/26/2016

Resource Management Company  
Attn: Robert Hemontolor  
3108 Brandau Road  
Hermitage, Tennessee 37076

RE: Durham Farms Phase 1, Section 1 Illicit Discharge

Dear Mr. Hemontolor:

On 2/26/2016, while conducting an erosion control inspection in Durham Farms Phase 1, Section 1, I observed an area South of Tanglewood Lane near the outfall where sediment accessed the tributary stream running into Drakes Creek. The silt fence barrier is failing along the stream in that area and requires maintenance to prevent additional sediment from entering Drakes Creek. The illicit discharge from the site is a violation of Hendersonville Municipal Code 18-208 (2). Please fix the erosion control deficiency by **3/10/16**.

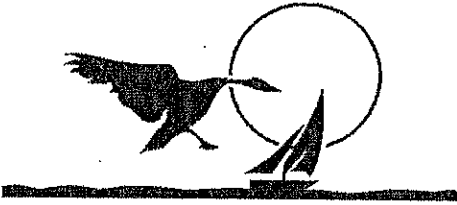
Failure to comply with the City of Hendersonville's erosion control standards could result in immediate suspension of all city inspections, issuance of a stop work order, and/or civil penalties.

If there are any questions concerning regarding this notice of violation, please contact me at (615)590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville





**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION – WARNING**

Date: 2/26/2016

Resource Management Company  
Attn: Robert Hemontolor  
3108 Brandau Road  
Hermitage, Tennessee 37076

RE: Durham Farms Phase 1, Section 2 Illicit Discharge

Dear Mr. Hemontolor:

On 2/26/2016, while conducting an erosion control inspection in Durham Farms Phase 1, Section 2, I observed the dewatering of a ditch just North of Lombardy Place. The dewatering was done without the use of a dewatering device to prevent sediment from leaving the construction site. The water was discharged directly into a ditch that flows into Drakes Creek. The illicit discharge from the site is a violation of Hendersonville Municipal Code 18-208 (2). In the future, please use the appropriate methods to remove water from work areas.

If there are any questions concerning regarding this notice of violation, please contact me at (615)590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION – WARNING**

Date: 2/26/2016

Carter Group, LLC  
Attn: Milford Scott  
517 Hagen Street  
Nashville, Tennessee 37203

RE: Our Lady of the Lake

Dear Mr. Scott:

On 2/22/2016, a follow-up inspection was conducted to verify that erosion control measures listed in the construction plans had been installed. There were several check dams that needed to be installed along the two ditches running parallel to the construction entrance. In addition to the check dams, inlet protection needs to be installed on site and some minor silt fence maintenance is required. Please fix the erosion control deficiencies by **3/9/16**.

Failure to comply with the City of Hendersonville's erosion control standards could result in immediate suspension of all city inspections, issuance of a stop work order, and/or civil penalties.

If there are any questions concerning regarding this notice of violation, please contact my office at (615)590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION – WARNING**

Date: 2/9/2016

Mr. Masoud (Shay) Ghaffari  
1670 Union Hill Road  
Goodlettsville, Tennessee 37072

RE: 138 Shorecrest Circle, Hendersonville, Tennessee

Dear Mr. Ghaffari:

On 2/4/2016, a City of Hendersonville Erosion Control Inspection review revealed that the lot listed above has erosion control deficiencies. There has been no activity on site since the beginning of 2016. The silt fence has failed and the lot needs to be stabilized to bring it back into compliance with the City of Hendersonville's erosion control standards. The deficiencies must be fixed by **3:00 PM on 2/18/16**. The City Design Engineer is also requiring that you submit an updated Land Disturbance Permit to the City of Hendersonville. Failure to comply with the City of Hendersonville's erosion control standards could result in civil penalties.

This letter does not negate any other deficiencies and violations found during the inspection review process. For any questions regarding this erosion control review, contact 615-590-4649.

Sincerely,

Helen Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 02/18/2016

James Andrew Etux Swint  
1598 Center Point Road  
Hendersonville, Tennessee 37075

RE: 118 Riverwood Drive

Dear Mr. Swint:

On 2/17/2016, a City of Hendersonville Erosion Control Inspection Review revealed that there were erosion control deficiencies at the construction site located at 118 Riverwood Drive, Hendersonville, Sumner County, Tennessee. The City Design Engineer is requiring that you obtain a city Land Disturbance Permit and submit an Erosion Control Plan immediately.

In addition to obtaining a Land Disturbance Permit, the City also requires that you submit the appropriate state documentation for your Stormwater Pollution Prevention Plan since the site is over one acre. Failure to comply with the City of Hendersonville's Erosion Control standards will result in immediate suspension of all city inspections, issuance of a stop work order, and/or civil penalties.

This letter does not negate any other deficiencies and violations found during the inspection review process. If there are any questions concerning the results of this inspection review, contact my office at (615)590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville

cc: JLM Builders, LLC





**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 02/18/2016

JLM Builders, LLC  
P.O. Box 161  
Ridgetop, Tennessee 37152

RE: 118 Riverwood Drive

Dear JLM Builders, LLC:

On 2/17/2016, a City of Hendersonville Erosion Control Inspection Review revealed that there were erosion control deficiencies at the construction site located at 118 Riverwood Drive, Hendersonville, Sumner County, Tennessee. The City Design Engineer is requiring that you obtain a city Land Disturbance Permit and submit an Erosion Control Plan immediately.

In addition to obtaining a Land Disturbance Permit, the City also requires that you submit the appropriate state documentation for your Stormwater Pollution Prevention Plan since the site is over one acre. Failure to comply with the City of Hendersonville's Erosion Control standards will result in immediate suspension of all city inspections, issuance of a stop work order, and/or civil penalties.

This letter does not negate any other deficiencies and violations found during the inspection review process. If there are any questions concerning the results of this inspection review, contact my office at (615)590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville

cc: James Andrew Etux Swint



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 3/4/16

Jamie Smith  
Hardaway Construction  
615 Main Street  
Nashville, Tennessee 37206

RE: The Point at Waterford Crossing

Dear Mr. Smith:

On 3/3/16, I completed an erosion control inspection at the Point at Waterford Crossing. While on site, I observed several erosion prevention and sediment control measures that were not properly installed, maintained, and functioning. As a result, sediment was observed entering and exiting the municipal separate storm sewer system. The illicit discharge into the MS4 is a violation of Hendersonville Municipal Code 18-208 (2). Inlet protection needs to be properly installed and maintained. I observed silt fence installed as inlet protection, which is not an accepted practice with the City of Hendersonville or the State of Tennessee. There were several fuel and paint spills that were not cleaned allowing pollutants to enter the MS4. Please address the erosion deficiencies that exist on site and have them fixed by the next city inspection on 3/17/16.

If there are any questions concerning regarding this notice of violation, please contact my office at 615-590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 3/4/16

Southeastern Building Corporation  
Attn: Cal Gentry  
1000 Kennesaw Boulevard  
Gallatin, Tennessee 37066

RE: Stonecrest Phase 4, Saundersville Station Phase 6

Dear Mr. Gentry:

On 3/3/16, an erosion control inspection revealed that the Southeastern construction sites for Stonecrest Phase 4 and Saundersville Station Phase 6 are not in compliance with the City of Hendersonville or Tennessee Department of Environment and Conservation's erosion control standards. Both sites have numerous erosion prevention and sediment control measures that are not installed. The majority of the installed measures are not maintained or functioning properly.

On 2/19/2016, I contacted a Southeastern representative via email regarding erosion deficiencies at Stonecrest Phase 4 and Saundersville Station Phase 6. In that email, I provided your representative with a list of erosion deficiencies for each site and advised that representative to fix the deficiencies by 3/3/16. The emails and verbal warnings have proved to be ineffective, so the City is making preparations to use the sureties to make repairs and correct the erosion deficiencies. A stop work order will also be issued until an additional reclamation letter of credit is obtained.

During previous inspections, I have not been able to locate a SWPPP box for the above listed sites. Please be sure to have a SWPPP box on-site containing your NOC, SWPPP, self-inspection documentation, site contact information, and rain records.

This letter is to notify you of the corrective actions the City of Hendersonville will take if the deficiencies are not fixed within 7 days. If there are any questions concerning this notice, contact my office at 615-590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION – 2<sup>nd</sup> Warning**

Date: 3/3/16

James Kaye  
1280 Tunbridge Trail  
Algonquin, Illinois 60102

RE: 141 Shorecrest Circle

• Dear Mr. Kaye:

On 3/1/16, a city erosion control inspection review revealed that the erosion control deficiencies at 141 Shorecrest Circle, Hendersonville, Sumner County, Tennessee have not been fixed. The silt fence at the back of the site is still failing and the slope needs to be stabilized. My inspection occurred during a rain event and I observed an illicit discharge into Old Hickory Lake directly from the site. The illicit discharge from the site is a violation of Hendersonville Municipal Code 18-208 (2).

I notified Elite Properties of the first illicit discharge on 2/17/16, and issued a notice of violation requesting that they bring the site back into compliance. I also advised Elite Properties to obtain a Land Disturbance Permit before continuing construction. Elite Properties did not comply with any of the above listed requests. Please work with your home builder to bring the site back into compliance before the next scheduled erosion control inspection on 3/15/16.

Failure to comply with the City of Hendersonville's erosion control standards could result in immediate suspension of all city inspections, issuance of a stop work order, and/or civil penalties.

If there are any questions concerning regarding this notice of violation, contact my office at 615-590-4649.

Sincerely,

*Helen A. Morrison*

Helen A. Morrison  
Erosion Control Enforcement Officer

Cc: Elite Properties



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION – WARNING**

Date: 2/18/2016

Elite Properties  
13 Industrial Park Drive  
Suite 400  
Hendersonville, Tennessee 37075

RE: 141 Shorecrest Circle

Dear Elite Properties:

On 2/17/2016, an Erosion Control Inspection Review revealed erosion control deficiencies at 141 Shorecrest Circle, Hendersonville, Sumner County, Tennessee. While inspecting the erosion control installed on site, I observed areas where the silt fence had failed allowing an illicit discharge from the site to enter Old Hickory Lake.

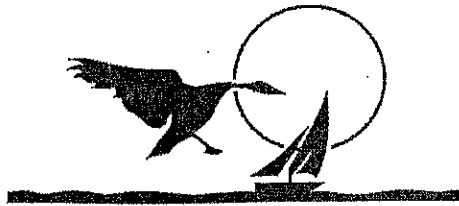
The illicit discharge from the site is a violation of Hendersonville Municipal Code 18-208 (2). Please fix the erosion control deficiencies by **3:00 PM on 2/26/2016**. The City Design Engineer has also requested that you obtain a land disturbance permit for the site and submit an erosion control plan. Failure to comply with the City of Hendersonville's erosion control standards could result in immediate suspension of all city inspections, issuance of a stop work order, and/or civil penalties.

If there are any questions concerning regarding this notice of violation, contact my office at (615)590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville





**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**Notice of Violation – Warning**

Date: 3/2/2016

Dorris Holman  
455 Forest Retreat Road  
Hendersonville, Tennessee 37075

RE: Private Property Land Fill

Dear Mr. Holman:

On 3/2/2016, the City of Hendersonville received several complaints about mud in the road at 455 Forest Retreat Road, Hendersonville, Sumner County, Tennessee. The mud was tracked from your private property land fill into the public roadway. Tracking mud in the roadway is a violation of Hendersonville Municipal Code 16-107. This is a notice of violation for the discharge of mud from your site onto the public roadway. You need to bring your site back into compliance with the City of Hendersonville's erosion control standards. The roadway needs to be cleaned **immediately** and you need to refurbish your construction entrance using 2-4 inch stone at least one hundred feet in length by **3/9/16**.

Previously, we discussed the size of your land fill site and I advised you to bring the site back into compliance and keep the site less than one acre of disturbance. Any site exceeding one acre is required by the State to submit a Notice of Intent for the General NPDES Permit for Stormwater Discharges from Construction Activities with the Tennessee Department of Environment and Conservation. The City of Hendersonville will also submit a letter to the State advising them of the current violation.

If you have any questions regarding this notice of violation, contact my office at 615-590-4649.

Sincerely,

Helen Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION - WARNING**

Date: 3/15/2016

Terry Frazier  
Elite Properties  
13 Industrial Park Drive, Suite 400  
Hendersonville, Tennessee 37075

RE: Austin Bell Funeral Home

Dear Mr. Frazier:

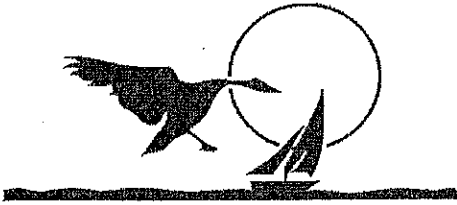
On 3/14/2016, an erosion control inspection revealed erosion control deficiencies at Austin Bell Funeral Home, Hendersonville, Sumner County, Tennessee. My inspection was completed during a rain event and I observed an illicit discharge from the construction site. The illicit discharge from the site is a violation of Hendersonville Municipal Code 18-208 (2). There were two sources of the illicit discharge, the first location being the graded bank behind the business. The second location was at the front of the parking lot where there is a break in the curbing. Run off leaving the parking lot has caused reeling underneath the erosion matting resulting in sediment being deposited on the sidewalk and leaving the site.

Please fix the erosion control deficiencies to prevent any additional illicit discharge for the site. Failure to comply with the City of Hendersonville's erosion control standards could result in immediate suspension of all city inspections, issuance of a stop work order, and/or civil penalties.

If there are any questions concerning regarding this notice of violation, contact my office at (615)590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 5/19/16

Benchmark  
Attn: Nathan Vaughn  
P.O. Box 3  
Hendersonville, Tennessee 37075

RE: Fountain Brooke Phase 2, Section 1 Illicit Discharge,

Dear Mr. Vaughn:

On 5/18/19, while conducting an erosion control inspection in Fountain Brooke Phase 2, Section 1, I observed an area on South side of the site where several EPSC measures were overwhelmed by sediment causing several failures. These failures led to a large amount of sediment being deposited into the stream bed and being washed downstream. The illicit discharge from the site is a violation of Hendersonville Municipal Code 18-208 (2). The erosion control deficiencies must be fixed by **5/21/16**.

Failure to comply with the City of Hendersonville's erosion control standards could result in the issuance of a stop work order and/or civil penalties.

If there are any questions concerning regarding this notice of violation, please contact me at (615)590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 5/20/16

Goodall Homes  
Attn: Chris Freeman  
438 Carriage House Lane  
Hendersonville, Tennessee 37075

RE: Millstone Phase 2 Illicit Discharge

Dear Mr. Freeman:

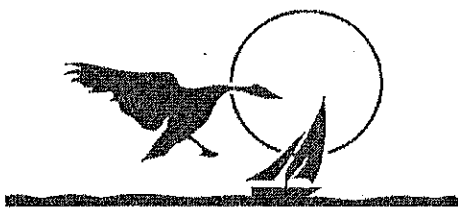
On 5/20/19, while conducting an erosion control inspection in Millstone Phase 2, I observed several erosion prevention and sediment control deficiencies on-site. These deficiencies allowed sediment to leave the site and enter the Municipal Separate Storm Sewer System and travel to a pond just east of the site. The illicit discharge from the site is a violation of Hendersonville Municipal Code 18-208 (2). The erosion control deficiencies must be fixed by **5/29/16**.

Failure to comply with the City of Hendersonville's erosion control standards could result in the issuance of a stop work order and/or civil penalties.

If there are any questions concerning regarding this notice of violation, please contact me at (615)590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 7/7/2016

Jeff Michaels  
106 Celebrity Drive  
Tupelo, Mississippi 38804

RE: Celebrity Coaches-110 Tennessee Way, Hendersonville, Tennessee

Dear Mr. Michaels:

On 7/7/16, I conducted an erosion control inspection for the Celebrity Coaches construction site. While on site I observed several areas where the silt fence had failed and sediment was deposited into the creek bed. This illicit discharge is a violation of Hendersonville Municipal Code 18-208 (2). The silt fence needs to be replaced in several areas. The two sediment basins are in need of maintenance and need to have dewatering devices installed per the site plans. In addition to maintenance of erosion controls the areas of the site where construction is not on-going need to be stabilized.

The erosion control deficiencies listed above need to be fixed within seven days. If you have any questions, call 615-590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville





**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 7/7/16

Southeastern Building Corporation  
Attn: Cal Gentry  
1000 Kennesaw Boulevard  
Gallatin, Tennessee 37066

RE: Stonecrest Phase 3

Dear Mr. Gentry:

On 7/6/16, Duane Allen and I went to the Stonecrest Phase 3 construction area during a rain event. We observed sediment laden water running from Stonecrest Phase 3 down Burntash Lane into Brierfield Way. We observed that there are no individual lot best management practices installed in Phase 3 allowing sediment to leave the site during each rain event. The perimeter fence proved to be ineffective during the rain event. This resulted in another illicit discharge from the Stonecrest Phase 3 site. This illicit discharge from the site is in violation of Hendersonville Municipal Codes 18-208 (2) and 16-107.

Please fix the erosion control deficiencies within seven days to prevent additional illicit discharges. If there are any questions concerning this notice, contact my office at 615-590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 7/5/16

Southeastern Building Corporation  
Attn: Cal Gentry  
1000 Kennesaw Boulevard  
Gallatin, Tennessee 37066

RE: Stonecrest Phase 3

Dear Mr. Gentry:

On 7/5/16, the Public Works Department received a complaint from a citizen residing at 120 Brierfield Way. The citizen stated there was a large amount of sediment deposited into the roadway and that straw was clogging the storm drains. I responded to the above listed location and observed that a large amount of sediment had been deposited in the roadway and someone attempted to clean the area. I observed the remnants of straw in two of the storm drains. The sediment was coming from the Stonecrest Phase 3 site. This illicit discharge from the site is in violation of Hendersonville Municipal Codes 18-208 (2) and 16-107.

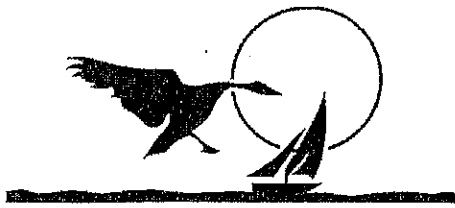
Please be sure to have a SWPPP box on-site containing your NOC, SWPPP, self-inspection documentation, and rain records.

Please fix the erosion control deficiencies within seven days to prevent additional illicit discharges. If there are any questions concerning this notice, contact my office at 615-590-4649.

Sincerely,

Helen A. Morrison

Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 9/1/16

Corey Flatt  
3025 Oak Grove Church Road  
Bethpage, Tennessee 37022

RE: 123 Pembroke Drive

Dear Mr. Flatt:

On 8/22/2016, it was brought to the City's attention that while completing work at 123 Pembroke you facilitated an illicit discharge of paint laden water into the Hendersonville Municipal Separate Storm Sewer System (MS4). This illicit discharge into the MS4 is a violation of Hendersonville Municipal Code 18-208 (2).

In the future, please be sure to properly dispose of hazardous materials. Any non-stormwater discharge into the MS4 is forbidden with the exception of activities listed under Municipal Code 18-208 (2) (a) (1-15).

Attached you will find a copy of the above listed Municipal Code and literature on Hazardous Waste Disposal. If there are any questions concerning this notice, contact my office at 615-590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 9/1/16

Molly Marinelli  
123 Pembroke Drive  
Hendersonville, Tennessee 37075

RE: 123 Pembroke Drive

Dear Ms. Marinelli:

On 8/22/2016, it was brought to the City's attention that while completing work at 123 Pembroke a painter you hired facilitated an illicit discharge of paint laden water into the Hendersonville Municipal Separate Storm Sewer System (MS4). This illicit discharge into the MS4 is a violation of Hendersonville Municipal Code 18-208 (2).

In the future, please be sure to advise workers on your property to properly dispose of hazardous materials. Any non-stormwater discharge into the MS4 is forbidden with the exception of activities listed under Municipal Code 18-208 (2) (a) (1-15).

Attached you will find a copy of the above listed Municipal Code and literature on Hazardous Waste Disposal. If there are any questions concerning this notice, contact my office at 615-590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 9/2/16

James Shaw  
Meritage Homes of Tennessee, Inc.  
3000 Business Park Circle, Suite 300  
Goodlettsville, Tennessee 37072

RE: Ashcrest Community

Dear Mr. Shaw:

On 8/31/16, I completed an EPSC inspection at Ashcrest Community and observed several erosion deficiencies that had not been corrected since my last inspection. I notified you on 8/18/16 of the same deficiencies. Be advised that a failure to properly design, install, or maintain BMPs constitutes a violation of Hendersonville Municipal Code 18-205. These deficiencies need to be corrected by **9/9/16 at 3:00 PM**. Failure to comply with this Municipal Code could result in civil penalties and/or issuance of a "Stop Work" order.

If there are any questions concerning regarding this notice of violation, please contact my office at 615-590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville





**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 9/15/16

Randy Keene  
Meritage Homes of Tennessee, Inc.  
3000 Business Park Circle, Suite 300  
Goodlettsville, Tennessee 37072

RE: Celebrity Coaches

Dear Mr. Keene:

On 9/15/16, I completed an EPSC inspection at Celebrity Coaches and observed erosion deficiencies that had not been corrected since my last inspection. I notified you on 9/2/16 of some of the same deficiencies. Be advised that a failure to properly design, install, or maintain BMPs constitutes a violation of Hendersonville Municipal Code 18-205. Failure to comply with this Municipal Code could result in civil penalties and/or issuance of a "Stop Work" order.

If there are any questions concerning regarding this notice of violation, please contact my office at 615-590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 9/15/16

Jeff Michaels  
106 Celebrity Drive  
Tupelo, Mississippi 38804

RE: Celebrity Coaches

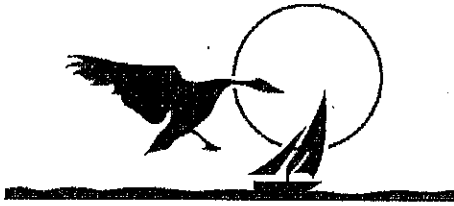
Dear Mr. Michaels:

On 9/15/16, I completed an EPSC inspection at Celebrity Coaches and observed erosion deficiencies that had not been corrected since my last inspection. I notified your site superintendent on 9/2/16 of the deficiencies. I have not received any response from K&J Associates regarding corrective action. Be advised that a failure to properly design, install, or maintain BMPs constitutes a violation of Hendersonville Municipal Code 18-205. Failure to comply with this Municipal Code could result in civil penalties and/or issuance of a "Stop Work" order.

If there are any questions concerning regarding this notice of violation, please contact my office at 615-590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville



**The City of Hendersonville  
Department of Public Works  
Erosion Control**

**NOTICE OF VIOLATION**

Date: 9/22/16

Southeastern Building Corporation  
Attn: Cal Gentry  
1000 Kennesaw Boulevard  
Gallatin, Tennessee 37066

RE: Stonecrest Phase 3

Dear Mr. Gentry:

On 9/17/16, a rain event occurred in Hendersonville that did not exceed the 2 year-24 hour design storm. The Best Management Practices installed at the Stonecrest Phase 3 site are not functioning properly. This resulted in another illicit discharge from the Stonecrest Phase 3 site. This illicit discharge from the site is in violation of Hendersonville Municipal Codes 18-208 (2) and 16-107.

Please install the appropriate BMPs within seven days to prevent additional illicit discharges. If there are any questions concerning this notice, contact my office at 615-590-4649.

Sincerely,

Helen A. Morrison  
Erosion Control Enforcement Officer  
City of Hendersonville

**Chip Moore, Public Works Director  
City of Hendersonville**

Chip Moore was promoted to Director of the Hendersonville Public Works Team after spending ten years as the City's Design Engineer. Chip rose to the opportunity to be a quiet and yet dynamic leader of a battered Public Works Department.

Chip dutifully rehired ten of eleven seasoned staff members that had left the department for various reasons over the previous 12-18 months. Under his leadership and tactful reorganization the Public Works Team is working more confidently and more efficiently than any time in the last decade. Employee morale has grown steadily and our Public Works Team has handled more challenges, more work and more entrepreneurial efforts over the last year than fathomable, exceeding all expectations.

Here are just a few of his team's accomplishments in the last 12 months of his leadership:

Entrepreneurial

1. Designed and built a salt barn – a project that had been on our books for about eight years. This project saved over \$100,000 from previous bids.



2. Applied for and received a grant for a horizontal limb grinder, "The Beast" from the Tennessee Department of Environment and Conservation. Developing a mulch grinding facility where all City limbs are picked up on road frontage by our Public Works Team and ground in-house and composted to varying levels to be sold to the public and/or used in-house to cover any local trails and flower beds. His application won the grant and the photo below shows TDEC Commissioner Robert Martineau, Jr. handing us the \$119,000 check at the "grand opening".



3. The Public Works team was recently awarded a Tennessee Clean Energy Grant of \$13,500 from the Department of Environment and Conservation to retrofit the City Hall lighting with LED lighting.
4. Chip has managed over \$500,000 in Community Development Block Grant projects for the past two years, to assist the older portions of Hendersonville.
5. Complying with TDEC mandates, Chip has coordinated the capping of the old landfill and the movement of 500 tandem truckloads of clay, thousands of cubic yards, from the Durham Farms development. Chip worked with the developer to secure thousands of cubic yards of earth, saving the City well over \$100,000.

#### Projectwise

1. Chip has coordinated and managed over \$1.2 million in City-wide drainage projects. This has involved working with the U.S. Army Corps of Engineers, CSX Railroad, TDOT as well as numerous property owners.
2. Chip is currently involved in the development and construction of the City's newest park facility, Arrowhead Park. He assisted the Parks Department in securing a Local Park and



Recreation Grant through TDEC for \$500,000 for Hendersonville's new Arrowhead Soccer Complex.

3. Chip is currently managing the New Shackle Island Road widening from SR386 (Vietnam Veterans Boulevard) to Iris Drive from three lanes to five lanes. This is an active TDOT project estimated at \$6,000,000.

His current overall capital project list has construction costs of roughly \$30 million.

4. Chip has managed to design and construct the widening of Volunteer Drive in a fast track type manner. This new road will accommodate over 500 new jobs in a virtual brownfield type development, critical to our recent ECD endeavors and job growth.
5. Chip managed the design, construction and completion of a new box culvert, the easing of an S-curve and widening of a winding Drakes Creek Road near our newest Burris Elementary School at the urging of and coordination with the Sumner County Board of Education. The Public Works Team completed the project on time and on budget to accommodate the opening of the school.

#### Professionally

1. Chip has increased our professional engineering staff by hiring and/or promoting two professional engineers, assisting an engineer-in-training to pass his Professional Engineers License, and hiring a new Erosion Control Inspector.
2. Chip has established and continued a quarterly newsletter to inform the Board of Mayor and Aldermen, employees and the public of the happenings in Public Works.
3. Chip has been recently published in several statewide and national publications.

Chip Moore, professional engineer, has masterfully raised the Public Works Team morale and has created a Team that gets the job done efficiently and effectively while continuing to train and grow talent from within.

The City of Hendersonville is proud and honored to submit his name as 2016 Municipal Public Servant of the Year.

Chip's motto....

**"PUBLIC WORKS, ALWAYS THERE"**